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archeological investigations

ACADIA FABBRI MEMORIAL


NATIONAL PARK / MAINE



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ARCHEOLOGICAL INVESTIGATIONS

AT FABBRI MEMORIAL

1983

ACADIA NATIONAL PARK

Bar Harbor, Maine

By

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Artifact Analysis and Historical Data Section

by

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Northeast Team
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A. Abstract

In the fall of 1983, research, archeological survey, testing, and mapping were conducted at the Fabbri Memorial, Acadia National Park, in response to proposals for development of visitor facilities at the site. During field work a number of structural remains, features, and artifacts were found; these relate to an early 1800s home or farmsite, a late-19th century summer home converted to a country club, and a Navy radio station extant from 1917 to 1935. The site has been declared eligible for the National Register of Historic Places. With the exception of the water tower base and artesian well area, which would be destroyed, development impacts could be minimized through specific design and construction restrictions. Completion of compliance procedures and archeological monitoring is necessary if development is chosen.

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E. Management Summary

During August and November of 1983, the Fabbri Memorial site was researched, surveyed, and cultural resources mapped. Shovel testing was conducted in areas where development of a chambered-mound sewage disposal system, comfort station, picnic and parking areas, and utility and water lines was proposed (Figs. 1, 2, and 3). Site survey and testing located 48 features related to three different periods of human land use--the Otter Cliffs Radio Station, a summer home converted to the Mount Desert Island Country Club, and an early-19th century occupation. Structural remains and features were drawn, mapped, described, and photographed, and selected artifacts surface-collected from historic dump areas. Artifacts were analyzed and the results included in this report.

Discussions among park and Denver Service Center (DSC) staff generated minor changes in proposed siting of picnic areas, parking, and the utility and water lines to minimize impact upon significant cultural resources.

The site was determined eligible for the National Register of Historic Places for its role in American defense and communications during World War I, and for its part in development of early radio technology. Site integrity is based primarily upon the the research potential offered by the site layout, organization, and extant wiring, equipment, and artifactual materials. The National Register form is appended to this report.

Land modifications made since the Radio Station closed include razing of the station structures and construction of the park loop road. A memorial commemorating Lieutenant Alessandro Fabbri, station commander, was built in 1939, along with adjacent parking facilities. During the 1940s a small ranger station was built by the National Park Service somewhere in the area near the present portable comfort facilities.

The proposed development will destroy the remains of the water tower, a buried well, an unidentified piece of concrete "curbing", and a

sewer line probably associated with the 1940s ranger station. Otherwise, impacts on known cultural resources can generally be avoided or mitigated by placing picnic sites and parking in areas away from structural remains; by laying water and utility lines in and/or along already disturbed road corridors; by archeological monitoring during construction; and by specific constraints written into design and specification documents. Much of the archeological potential of the site can be preserved by burying exposed remains with clean sand.

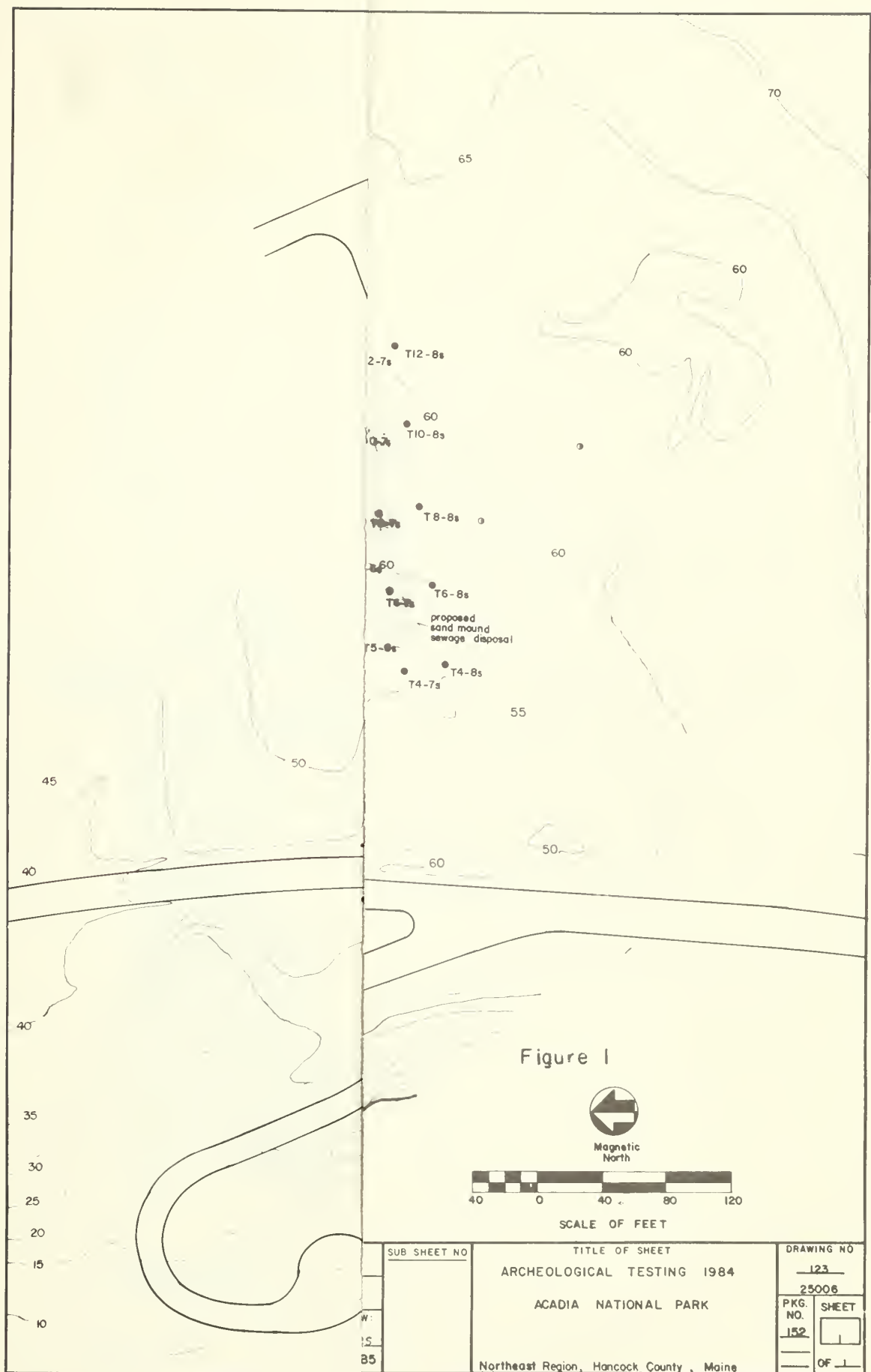
Thorough evaluation of potential impacts upon site resources and formal compliance with cultural and natural resources legislation and NPS policy must be completed prior to development. Other specific recommendations are in section Q.

F. Project Description

The development project proposes improvement and addition of visitor facilities at Acadia National Park. Each year a high percentage of the three million visitors who travel the park loop road around Otter Point stop at the Fabbri Memorial to read the memorial sign, explore the rocky shore below, and use the portable chemical toilets. Crucial visitor services and facilities are badly overloaded along this road; more picnic areas, restrooms, and parking spaces are urgently needed.

Package 152 proposes installation of 20 individual picnic sites, additional parking spaces, and an eight-bay comfort station on approximately one acre at the Fabbri Memorial area (Fig. 4).^{*} Sewage from the comfort station would be treated and disposed on-site through an elevated chambered-mound system covering some 30,000 square feet. An on-site well and storage tank would provide potable water; supporting utility systems, involving some 3,000 feet of buried water and power

^{*}Figure 4 is the revised development plan. The proposed picnic areas and paths were shifted to the west side of the site following discovery of a significant number of cultural resources during testing.



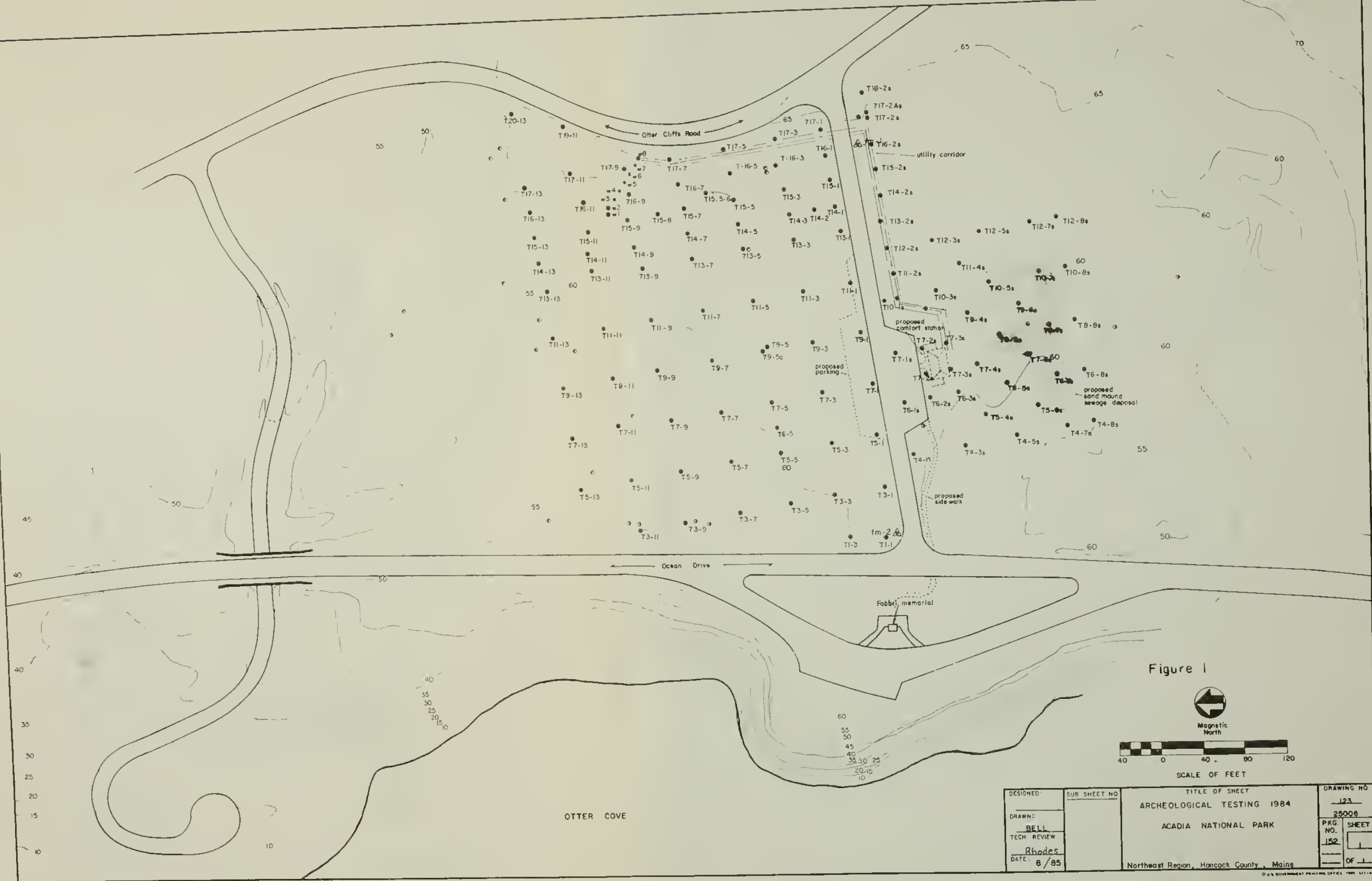
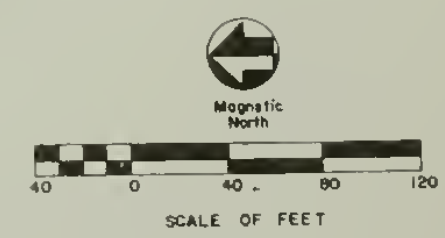
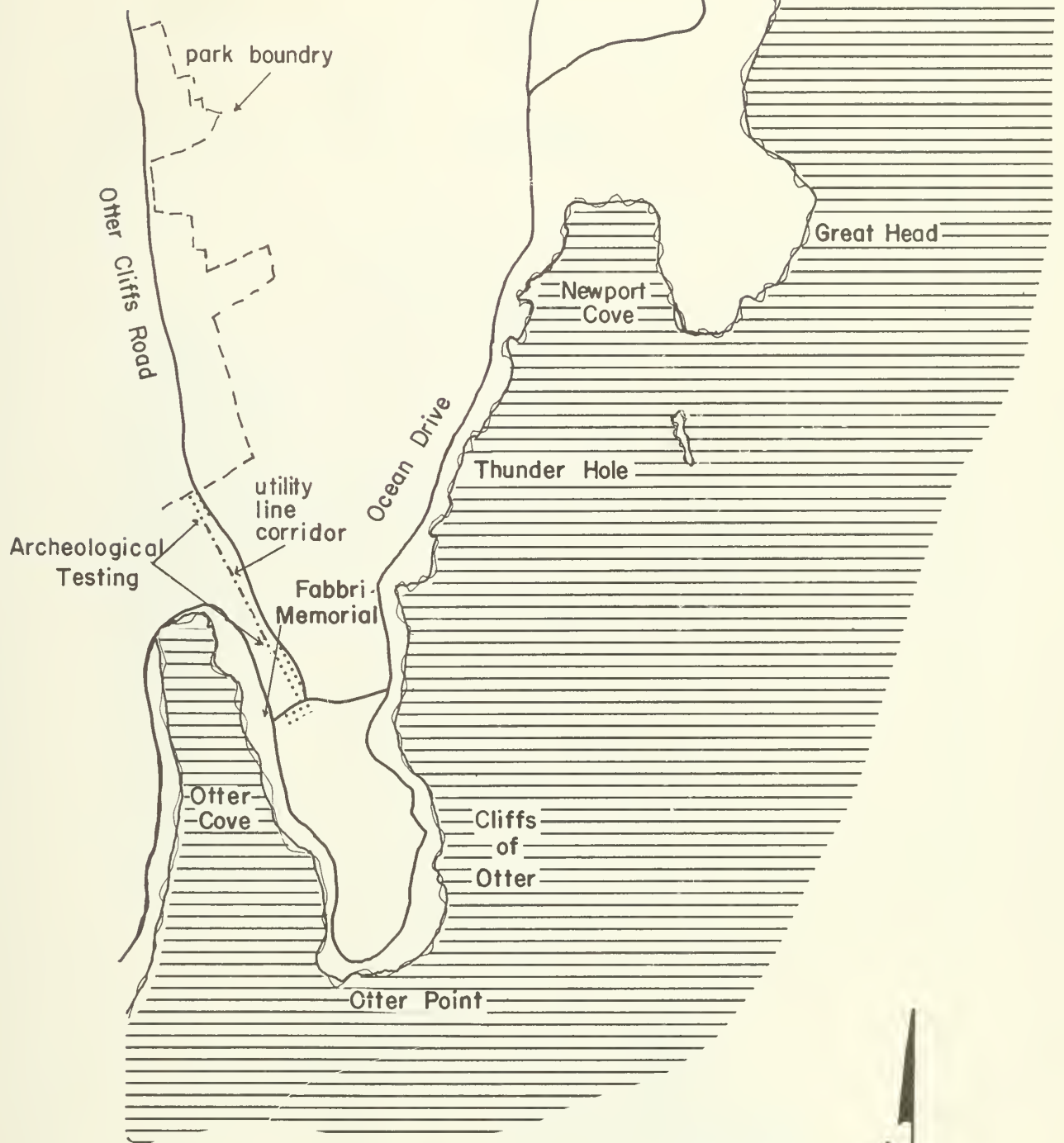


Figure 1



DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN:		ARCHEOLOGICAL TESTING 1984	123
TECH REVIEW		ACADIA NATIONAL PARK	25006
DATE: 8/85		Northeast Region, Hancock County, Maine	PKG. NO. 152
			SHEET 1 OF 1

ACADIA NATIONAL PARK
Mt. Desert Island, Maine



Scale 1" = 1600'
0 800 1600

Utility Line
Archeological
Testing



Figure 2

123 | 25005
DSC | AUG 85

LEGEND



debris scatter

Features

- 1 manhole
- 2 slumped area/hole
- 3 slumped area/hole
- 4 stone step
- 5 stone step
- 6 remnants of Barracks A
- 7 electrical manhole
- 8 electrical manhole
- 9 subsurface foundation
- 10-12 non-historic features
- 13 stone-lined well
- 14 non-historic feature
- 15 cut granite block
- 16 cut granite block
- 17 cut granite block
- 18 concrete slab, Barracks B porch
- 19 concrete slab, Barracks B porch
- 20 Barracks B foundation
- 21 brick sill
- 22 slumped fill with exposed pipe
- 23 pipe and concrete slab
- 23-A concrete slab
- 24 depression
- 25 concrete slab
- 26 concrete footings
- 27 concrete footings
- 28 buried well site
- 29 subsurface sewer pipe
- 30 non-historic feature
- 31 cesspool
- 32 depression
- 33 stone foundation
- 34 tie down
- 35 brick-filled depression
- 36 tie down
- 37 foundation
- 38 tie down
- 39 tie down
- 40 pipe
- 41-A washed-out area
- 41-B cut granite blocks
- 42 remains of earthen dam
- 43 concrete footings
- 44 concrete slab
- 45 depression
- 46 concrete foundation
- 47 stone-lined well
- 48 concrete footings
- 49 stone foundations
- 50 subsurface bricks and mortar

fea 44

fea 45

fea 48

fea 46

fea 47

dump no. 4
(approx. location)

5,27

60

dump no. 2
(approx. location)

ump no. 1
(approx. location)

boatman's lockers

storage

storage

55

50

drop inlet



Magnetic
North



SCALE OF FEET

SUB SHEET NO

TITLE OF SHEET

DRAWING NO.

CULTURAL RESOURCES BASE MAP
FABBRI MEMORIAL AREA

123

ACADIA NATIONAL PARK

25008

1984

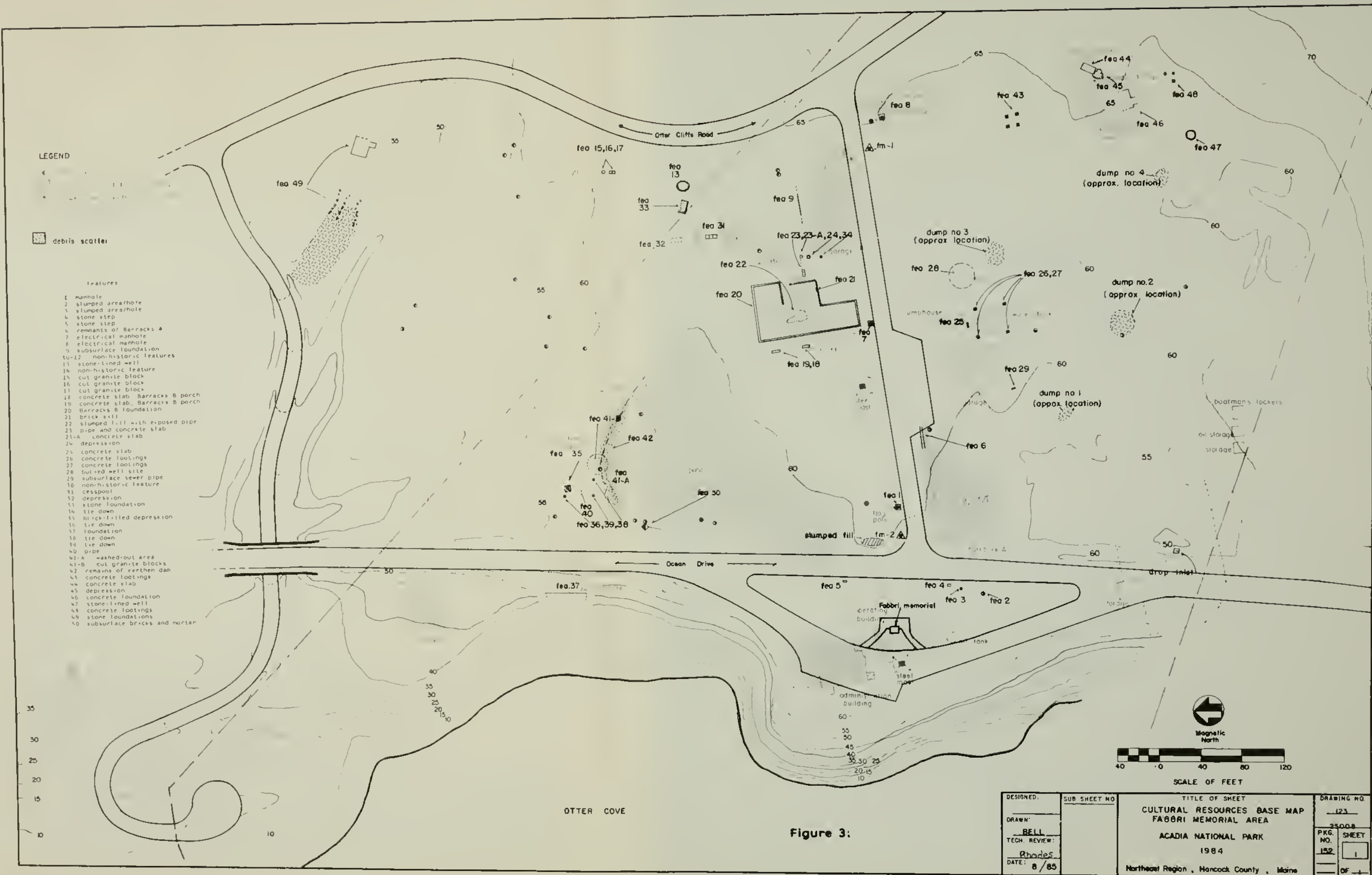
PKG. NO.

152

SHEET

OF

Northeast Region, Hancock County, Maine



DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN:		CULTURAL RESOURCES BASE MAP	123
TECH. REVIEW:		FABBRI MEMORIAL AREA	25008
DATE:		ACADIA NATIONAL PARK	PKG. NO. SHEET
8/85		1984	152 1
		Northeast Region, Hancock County, Maine	OF 1



SAFE DATA

HORIZONTAL DATUM:
ASSUMED ORIENT. FF 1/16 E500

VERTICAL DATUM:
MSL 1929 - 1965 U.S. 4060 OTTER REE
NEAR POST OFFICE AT OLD SCHOOL GROU

SURVEY NORTH SIDE OF ROAD BY
DENVER SERVICE CENTER, SURVEY 6000' 40' 80'

SURVEY SOUTH SIDE OF ROAD BY
ANDREW J. SHYKA, BANGOR, ME. OCT 8
SCALE 1"=40'

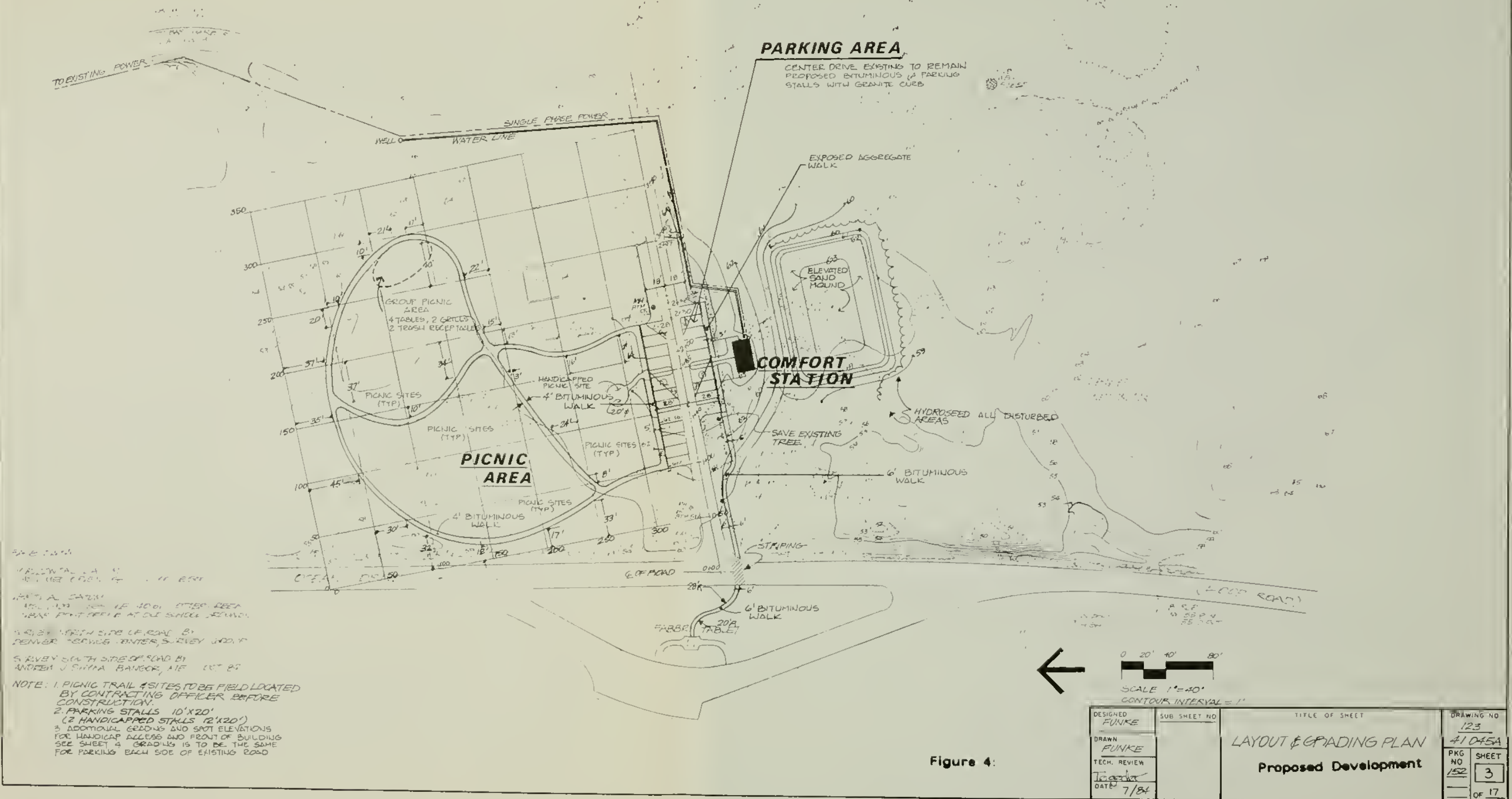
NOTE: 1. PICNIC TRAIL #SITES TO BE FIELD TOUR INTERVAL = 1"

BY CONTRACTING OFFICER
CONSTRUCTION.

2. PARKING STALLS 10'X20'
(2 HANDICAPPED STALLS 12'X24')

3. ADDITIONAL GRADING AND SPOT ELE
FOR HANDICAP ACCESS AND FRONT OF
SEE SHEET 4. GRADING IS TO BE
FOR PARKING EACH SIDE OF EXISTING

SUB SHEET NO.		TITLE OF SHEET		DRAWING NO.	
		LAYOUT & GRADING PLAN		123	
		Proposed Development		41045A	
				PKG NO.	SHEET
				152	3
				OF 17	



lines, would also be installed. The plan proposes extension of utility lines along the Otter Cliffs Road from the park boundary south to the memorial area. The lines would be run underground in the road shoulder.

If sensitive clearing and siting procedures are used, site disturbance would be fairly minimal in the area designated for picnic development. Water and utility lines would disturb the ground to about 5 feet below surface and some five feet on either side of the line. The chambered-mound area would be cleared from ground level to around 2 feet deep, then refilled with clean fill.

G. Natural Setting

Fabbri Memorial is on the west side of the central portion of Otter Point, overlooking Otter Cove which lies some 80 feet below. Otter Point is a mile-and-a-half long rocky promontory that reaches south into the Atlantic on the southeastern coast of Mount Desert Island, Maine (Fig. 5). The island lies about two-thirds the way up the coast of Maine.

The geologic history of the area goes back several hundred million years. At first, igneous rocks were covered over by sedimentary deposits. Later, a series of geologic processes produced the two types of granite found at the Otter Cliffs site--the coarse-grained, pinkish granites and the earlier, fine-grained grey granites (Chapman 1970:16-21). Many of the underlying rocks have now been uncovered and eroded by glacial action and marine forces (USDI NPS 1976:28). Striations and polish on the large granite slabs along the shoreline below the site provide evidence of this glacial activity. In addition, strong wind and wave action have battered the coast, helping to erode away the western edge of the site.

The special geology of the island has also helped shape the history of the site. The cove provided a protected anchorage for early explorers, while the relatively flat land near the memorial was suitable for



Figure 5: Location map, Acadia National Park
(one page)

subsistence farming and homesteads. In the 20th century, it was the underlying granite core of Mount Desert Island and its strategic location on the wind-swept coast that gave the Otter Cliffs Radio Station such excellent radio reception.

Glacial soils in the area are composed of a fine reddish, sandy silt matrix with numerous cobbles and pockets of grey, sandy volcanic tuff. These soils are generally covered by varying depths of humus. The heavy, grey-green clay found in some parts of the Fabbri site may be naturally deposited estuarine or marine clays--known as the Presumpscott formation--left behind when the glaciers retreated, allowing re-emergence of submerged coastal areas (Morrissey, 1983). Table I shows site soil profiles.

Climate in the area is characterized by frequent change and spatial/temporal variation, a wide range of temperatures, and fairly uniform precipitation (USDI NPS 1976:32). In the project area, the climate is modified somewhat by the nearby ocean.

There are three natural habitats present in the project area--marine, estuarine, and terrestrial. These provide a diverse spectrum of life forms, many of which have historically provided subsistence and livelihood for area residents.

Regional flora are a combination of arctic, subarctic, and marine species. Site vegetation is characterized by a mixed forest with deciduous species predominating. In the northern portion of the site, large trees up to 18 inches in diameter include eastern white pine, white spruce, and an occasional red maple. Smaller trees--aspen, white ash, shad bush, big tooth aspen, beech, mountain ash, hawthorn, mountain maple, northern white cedar, and black spruce--have grown up in the past 70 years. A dense understory is composed primarily of berry and rose bushes. Several apple trees in the northern and eastern portions of the site may have grown from seeds or as sprouts from old stumps. These indicate past human site use.

A number of birds, a deer, and several small mammals were seen during the project. Human modification of the area is reflected in the open meadow areas, the land topography, and the assortment of vegetation types, some of which have been introduced within the recent past. Historically the area was home to large numbers and varieties of wildlife; populations are now reduced due to hunting, farming, and other human land use.

H. Site Description

Four roads cross or help define the site; these include the north/south Otter Cliffs road, also known as the "town" road. This road circumscribes the site on the east, and is bisected by the Fishhouse Road which curves from the Otter Cliffs road down to the shore of Otter Cove just north of the site (Fig. 3). The north/south Park Loop road (Ocean Drive), built by John D. Rockefeller in the 1930s, cuts through the site's western edge. A short paved road bisects the site to connect the Loop and Otter Cliffs roads. This connecting road is in the same general location where the Navy first built an access road, and later, a new base entrance road (Fig. 6). The shoreline of Otter Cove marks the western boundary of the site. For purposes of the National Register form, the slightly curved southern boundary was established arbitrarily based upon presence/absence of artifacts and structural materials, and upon a fence line visible in historic photographs (Photograph 1).

On the far western edge of the site is a commemorative marker honoring Lieutenant Alessandro Fabbri, commander of the Radio Station, for his accomplishments during World War I (Photograph 2). The memorial is bounded on one side by a parking lot which overlooks the cove, and on the other by the Park Loop Road.

On the Memorial oval, the sod has slumped in two areas--one into a hole blocked with boards and fill. This hole was probably a result of Radio Station activities, but its exact function has not been determined. On the steep slope below and southwest of the monument, large cut granite blocks line an opening, now overgrown by trees. Concrete and

Figure 6: 1921 Site Map

In map pocket



Photograph no. 1. Barracks B and fence

Source: U.S. Naval History Center (NR & L 5633)



Photograph no. 2. The Fabbri Memorial

Source: Acadia National Park

steel dock supports can still be seen on the rocks below the cliff at low tide. Debris from the country club/administration building litters the steep slope above the cove. Just north of the monument, brick and cement remains balance on the edge of the cliff, and some have eroded onto the slopes below.

Partially-buried concrete is visible in the grassy area just south of the connecting road; underground piping was also found here. In the adjacent meadow are underground sewer pipes, a buried artesian well, four concrete pads, and a concrete "curb." The small meadow, dotted with shrubs and large rose bushes, is partially enclosed by trees.

In the far southeastern corner of the site, another small meadow is present along the Otter Cliffs Road. At its west edge are concrete pilings, foundations, a narrow concrete slab floor near a depressed area, a round stone-lined well, and a dump site.

Foundations and slumped fill remain just north of the connecting road. A septic system composed of several underground, interconnected concrete holding tanks is northeast of and adjacent to the largest foundation; a variety of subsurface foundations, tie downs, and concrete slabs are scattered throughout the area. Three underground brick-lined manholes lie along the connecting road; one on the south side and two on the north.

The old road leading into the facility can easily be seen during fall and winter. It begins at the Otter Cliffs Road and curves gently westward to the "guard post" area with one fork running downhill towards the Fishhouse Road. This road, now covered by brush and trees, is blocked across its eastern end by cut granite blocks (Fig. 3).

In the far northwestern corner of the site are a brick-filled depression, tie downs, pipe, electrical artifacts, and an extensive raised linear area containing cut granite stones in and under the fill. Other cut granite stones are scattered downslope to the north. This bermed area

was once used to contain the station swan pond on its northern and western edges.

Near the Otter Cliffs Road is a second, stone-lined, debris-filled well. It is situated near a rectangular raised area whose linear arrangement of dry-laid, uncut, reddish coarse-grained granite blocks indicates an old building site.

I. Previous Investigations

Johnson and Sanger's 1977 study of sites in Acadia National Park concentrated on prehistoric archeology, finding eleven sites on Mount Desert Island shore zones. All the other archeological reports reviewed were site specific and did not deal with Otter Point. Wendell S. Hadlock's historical survey included the "Otter Creek Navy Receiving Station" as site No. 14 on his list of historic sites (1963:13). A study of Acadia's historic resources by Patricia Rubertone and others (1979:28), recommended an historic district designation for the Otter Point area. This study provides general data on 19th century properties on the Point and contains forms for several area sites, including the R. Young and Elisha Young properties, and Aulick Palmer's 1884 "Otters Nest." Len Brown's history report on Acadia does not mention the Fabbri site, but does provide some historic data on 18th and 19th century land use in the area (Brown 1971:24).

Former Acadia Superintendent George B. Dorr briefly discusses the radio station in his 1948 book, giving some general background information on Aulick Palmer and John D. Rockefeller's road building projects.

J. Prehistory Overview

Along the northeastern coast of North America archeologists have found traces of past human activities dating to about 12,000 years before present. However, documented sites on Mount Desert Island are more recent; most are shell middens concentrated on coastal and inlet areas, and along fresh water streams. These sites date from ca. 2,500 to 400 B.P. (Mastone 1979:14).

Historical records document the presence of numerous Penobscot and Passamaquoddy Indian summer camps and villages on Mount Desert Island well into the 19th century (Mastone 1979:14). The Maine Historic Archaeological Sites inventory includes the Winskeag [sic] Settlement site, (site No. ME 028-1), a contact period Indian settlement in the vicinity of Otter Creek Point. Dongan's 1688 census listed one Indian family living on the east side of Winsheag [sic] Bay.

K. Historical Data

The recorded history of Otter Point may date to Samuel Champlain's discovery of Mount Desert Island in 1604. Anchoring in the waters of a sheltered inlet, supposedly Otter Cove, Champlain noted smoke curling up from above the shoreline. Apparently the Indians had preceded him to the island (Mastone 1979:14).

Dispute between France and England over possession of this region began a few years later and continued into the 18th century. There are indications that this fight for control was far from settled when seigneur de Cadillac and his wife took up residence in the area. Cadillac, whose claims of noble lineage were dubious, settled on "Winsheag Bay" in the 1680s.

While some have identified "Winsheag Bay" as present-day Otter Cove, others place it on the east side of Frenchman's Bay, so the location of Cadillac's home is conjectural (Rubertone, et al. 1979:28; Sawtelle n.d.:161). In 1688, the French government granted Mount Desert Island and nearby territories to Cadillac. Though Cadillac's stay here was brief--only two or three years--his title to the land would bear weight in important ownership arguments more than one hundred years later (Sawtelle n.d.:163).

Mount Desert was used as a rendezvous and a stopping place for British and French ships during the late 1700s and early 1800s. Letters and documents of the period refer to ruins of houses at Southwest Harbor prior to establishment of the English settlement of Soamsville, built in

1762 by Abraham Soams and James Nicholson. By 1768 there "were ten male signators on a petition by the inhabitants of Mount Desert Island to Governor Bernard" (Rubertone et al. 1979:9).

In 1785, Marie Therese de la Mathe Cadillac de Gregoire, Cadillac's granddaughter, petitioned Massachusetts for control of Cadillac's Mount Desert Island lands. By now, the United States governed the area. A government so recently established with the aid of France was more inclined to look favorably on a claim dating back to the French regime. De Gregoire was eventually awarded the eastern half of Mount Desert Island, including Otter Point. Much of these properties were then sold to settlers already established there. What remained was secured from de Gregoire in August 1792 by General Henry Jackson who later turned over his land claims to William Bingham of Philadelphia (Sawtelle n.d.:165-66; Brown 1971:25).

Apparently Otter Point was among these lands, for in 1806 and 1807, William Bingham acquired title to the point from the Commonwealth of Massachusetts (Deeds Records Vol. 18:109, 112, 116, 119; Vol. 21:294, 299, 302, 305). Thus Otter Point became part of Bingham's vast holdings in Maine which totaled some two million acres, part of a land development scheme which saw limited success before Bingham's death a few years after his acquisition of the point (Sawtelle n.d.:166). Whatever the shortcomings of his developments, he left behind a solidly administered estate; this estate controls Maine lands down to the present day.

It was probably quite difficult for local people to legally acquire land from the Bingham estate, which was administered from Philadelphia. It is possible the Fabbri site area was occupied by squatters in the early-19th century. Either they may have occupied the land and gained title at a later date or failed to secure title and so left no trace in official records. What the deed records do show is that Lewis Bracy acquired the Fabbri site property from the William Bingham estate in 1868. Bracy received all of "Lot 81"--most of the west half of the Otter Point (Deeds Records Vol. 132:305). Within eleven months Bracy transferred title to the southern

portion of the site area, some five acres, to Elbridge Young for \$125. The transfer included "the buildings thereon" (Deeds Records 138:539). It is unlikely Bracy was selling buildings he had just erected. More probably, his acquisition of Lot 81 in 1868 included land Elbridge Young had already built on. So Bracy merely gave Young official title to the five acres he occupied. Bracy's deed to Elbridge mentions the Robert Young line as the east border of the property. A sketch map in the Bar Harbor library, showing a mail route for the 1850s and 60s, places an Elisha Young on Otter Point (map on file, Jessup Memorial Library). This evidence supports the possibility the Young family was established on the point before 1868.

Bracy transferred title of the northern portion of the site area to P.S. Fernald in 1873, Elbridge Young's line being the south boundary of this property. This northern tract consisted of about five or six acres (Deeds Records Vol. 138:493; Vol. 145:543). In 1886, Fernald in turn transferred the property to John Carr and Arthur Newman. He also turned over to them another parcel lying immediately to the east, described as the "premises now occupied by Robert Young." Thus the Robert Young premises are established on the eastern edge of the Fabbri site (Deeds Records Vol. 209:387-89). It is possible that the Youngs farmed the area since Otter Point is one of the few places on the island where there is historic evidence of farming (Rubertone 1978:11).

Elbridge Young probably occupied the southern portion of the site area until 1883, when he deeded over the land to Aulick Palmer. The deed stated that all "bodies of persons now lying buried in said parcel of land may remain therein until they can be suitably removed to some other place of burial." Though boundary descriptions differ slightly, it is the same parcel described in Bracy's deed to Young, its area now estimated, perhaps more accurately, at seven acres. On this tract Palmer had a house built in 1884 (Deeds Records Vol. 186:504; interview, Gladys O'Neill, 1983; Photograph No. 3).

Aulick Palmer, from Washington, D.C., was part of Mount Desert's growing summer colony of affluent people from the lower eastern seaboard who found the island a pleasant vacation retreat. Apparently Palmer was, when time allowed, a United States deputy marshal (Joy, Vol. 1:23, 1966-75). He and his family spent the warm months at a "cottage" in Bar Harbor and at their roomy house on Otter Point, which came to be known as "Otter's Nest." This house was located where the Fabbri monument now stands. It commanded a pleasing view over Otter Cove and out to sea toward Little Cranberry and Baker islands. It remained a family residence until 1910, when the Palmers opened it as the Country Club of Mount Desert. This was a private club, with John D. Rockefeller, George Dorr, and Robert Abbe among its stockholders (Bar Harbor Record, February 2, 1912). The Bar Harbor Record of September 28, 1910, stated the purpose of the newly organized club was to furnish amusement for "hotel guests of moderate means." Renovations were scheduled for the coming winter, including the construction of a "long pier . . . so that all classes of yachts and launches may land with perfect ease. . . ." The dining room and kitchen would be enlarged, more space provided for "visiting teams . . . croquet grounds, tennis courts and other facilities for outdoor amusement will be laid out, and everything points to the success of the club by next summer" (Bar Harbor Record, September 28, 1910). By 1912, the Bar Harbor Record claimed the club was "a pronounced success" and "an important factor in the social lives of Bar Harbor's summer colony." New plans called for an enlarged ballroom and a new wharf (Bar Harbor Record, February 21, 1912). Yet it seems to have enjoyed only a brief period of popularity. By 1917, the club was closed and Otter's Nest in disrepair (Hovenden 1979:1; Castner n.d. (a):3).

By then the United States was entering World War I. Alessandro Fabbri, another member of the summer colony, was an amateur radio enthusiast who hoped to establish--with his own funds--a receiving station for the U.S. Navy (Photograph 4). Radio call books of the period show that radio station license #1AJ was held by Alessandro Fabbri, Bar Harbor, Maine, in 1916 (Shafer, personal communication, 1983). Born in

Photograph no. 3. Station Commissioning

Source: U.S. Naval Historical Center (MOD 5635)





Photograph no. 4: Lieutenant Alessandro Fabbri, 1919
Source: U.S. Naval Historical Center (MOD 5635)

New York City in 1877, Fabbri spent most of his childhood in Italy. The son of a wealthy family, he had the free time to follow a number of scientific pursuits in which he took a lively interest; biology and radio being chief among these (Castner n.d.(a):Item 84). Now at age 39, he was hoping to make a substantial contribution to the war effort. In attempting to effect this, he traveled to Boston and Washington, D.C., and met with Secretary of the Navy Josephus Daniels. Along the way he enlisted the active support of an ambitious young under-secretary of the Navy--Franklin D. Roosevelt. After months of bureaucratic delays, some of which were intentional, Fabbri got what he wanted--the Navy's acceptance of his station and a commission for himself in the Naval Reserve as officer in charge of that station (Castner n.d.(a):1-9; Ellsworth Vol. XI:30).

Fabbri determined that the most promising site on the island for his receiving station was the old Country Club of Mount Desert. Ownership of the property had passed to James Palmer, Aulick's son. Fabbri leased from James the seven-acre tract on which Otter's Nest was situated. He also secured a lease on the five-acre tract to the north--the same property Fernald had deeded to Carr and Newman in 1886. Since then the land had changed hands twice: Carr and Newman to Jaspar Wyman and Bartlett Brown in 1888, Wyman and Brown to the Millbridge Real Estate Company in 1888. It was this real estate company from whom Fabbri leased the property. These two tracts, together totaling some twelve acres, comprised the reservation for the new Otter Cliffs Radio Station (Deeds Records Vol. 216:511; Vol. 226:220; Vol. 518:504; Hovenden 1979:1).

The station was officially commissioned at noon on August 28, 1917 (Photograph 3). While Ensign Alessandro Fabbri and the rest of the garrison stood at attention in their dress whites and saluted, the American flag was raised and a bugler played the Star Spangled Banner. (The Acadian, 28 April 1972:14; Castner n.d.(2):10; photograph on file, Jessup Memorial Library).

"Otter's Nest," the Palmers' country club building and one-time residence, was now put into use as a receiving station and as quarters for the radio operators. It subsequently became known as the Administration Building (Castner n.d.(a):Item 7; photograph 5).

All station personnel were naval reservists with the exception of Chief Raymond Cole who was a regular. While Fabbri attended to the administrative details, Cole was, perhaps, the electrical talent of the operation at its inception. It was he who put together the station's first long range receiver, a "bread board" assemblage of whatever parts were available (Hovenden 1979:2). Apparently the two 165 feet high steel spark towers, which dominate later views of the base, replaced wooden towers built in the first few weeks of the station's existence. One of Cole's first receivers employed an antenna stretched from the west tower to a dock on Otter Cove. This tower was located beside the administration building, the other was about 200 feet to the east (Castner n.d.(a):10, Item 32; photographs on file, Jessup Memorial Library; photographs Nos. 5, 6, and 7).

The Otter Cliffs Radio Station was, it turned out, ideally situated. Even with the primitive equipment of these first months, the station had outstanding reception capabilities. But it took some time for higher ranking officers in the Navy to realize this. Commanding officer of the Navy's communications branch at this time was A. Hoyt Taylor, a man eventually famed for his work in the development of radar. At this time he was quite enamored with the ground wire system of static elimination and the radio station at Belmar, New Jersey, of which he was directly in charge. Taylor was proud of his station's reception and recording capacity and more than slightly annoyed when evidence of Otter Cliff's superiority began to accumulate (Castner n.d.(a):17-19; Taylor 1948:54).

Otter Cliffs had more than location going for it. It had a remarkably talented staff of operators, especially considering the small pool of reservists it was forced to rely on during the first few months. The quality of copy produced by operators like Herbert Hovenden and



Photograph no. 5: Administration Building and Traffic Room, view facing west.

Source: Jessup Memorial Library, Bar Harbor, Maine



Photograph No. 6: Barracks A, Administration Building and towers. Looking northwest from "The Field."

Source: Jessup Memorial Library, Bar Harbor, Maine



Photograph no. 7: Administration Building, pump house and steel masts, view looking northwest.

Source: U.S. Naval History Center (NR & L 5632)

Chesleigh Chisholm was eventually acknowledged by the top echelons of the Navy. Beginning sometime around March of 1918, the station established a reputation as the pre-eminent receiving station in the United States for over-seas transmissions, a status it maintained until the end of the war and for some time thereafter (Castner n.d.(a):10). Once it was so recognized it began attracting the talent stations like Belmar had previously been hoarding. Beginning in 1918, important names in radio research began appearing at Otter Cliffs, including radio scientist Dr. Greenleaf Pickard and Chief Engineer J.A. Proctor, both of the Wireless Specialty Company, a business afterwards subsumed by R.C.A. (Castner n.d.:Item 75).

Before the end of 1918, Otter Cliffs was the sole United States receiving station for all European transmissions; enlarged facilities were necessary. A series of receiving shacks were built in a north-south line some 120 yards east of the administration building (photograph 8). Each shack was assigned a station in Europe whose signal it was responsible for receiving. These included Lyons, France (YN, 150 Kw, 22.2 KHZ); Carnavon, Wales (MUU, 300 Kw, 21.13 KHZ); an unnamed city in Italy (probably Rome--IDO, 350 Kw, 28.57 KHZ); Stavanger, Norway (LCM, 300 Kw, 25.00 KHZ); and the powerful German station at Nauen known as POZ (600 Kw, 23.8 KHZ). Nantes, France, (UA, 33.35 KHZ) and/or Lafayette, France (LY) were also monitored on a regular basis. (Hovenden 1979:10; Castner n.d. (a) 10; Shafer 1983). The shacks were semi-permanent structures without foundations, set on four concrete blocks. On an inspection tour in 1919, A. Hoyt Taylor reported five receiving shacks spaced at 50-foot intervals. However, judging from period photographs, the number and positioning of the easily moveable shacks was frequently changed (Taylor 1919: n.p.; photographs on file, Jessup Memorial Library).

Beside the shacks was a small building in which Proctor and Pickard conducted some of their special experiments, beginning in the spring of 1918. Proctor and Pickard were particularly dedicated to the use of wire loops and rectangles for the reduction of static and they soon had the

open area to the east of the receiving shacks full of strange looking wooden frames to which the wiring was attached (photograph 9). During the winter before their arrival the base had been experimenting with loops, and antenna wire had been laid on the snow in a loop 6,000 feet in circumference. The loop extended beyond the limits of the reservation some 2,400 feet east, to a point 100 feet higher than the station, apparently almost to the eastern shore of the point. The station made use of this loop when static was especially bad. Its success was probably one of the reasons Proctor and Pickard came to Otter Cliffs (Castner n.d.(a):34; Item 75).

The loop system Proctor and Pickard eventually developed at Otter Cliffs proved a breakthrough in reception techniques. Known as the "Proctor loop collector system" it featured two

diametrically opposed loops of three turns each, 30 feet high and 70 feet long, one of which had a variable amount of inductance in series with it and the other a variable amount of capacitance. By varying these it was possible to place the two loops out of phase (Howeth 1963:599).

In other words, the diametrically opposed loops were used to

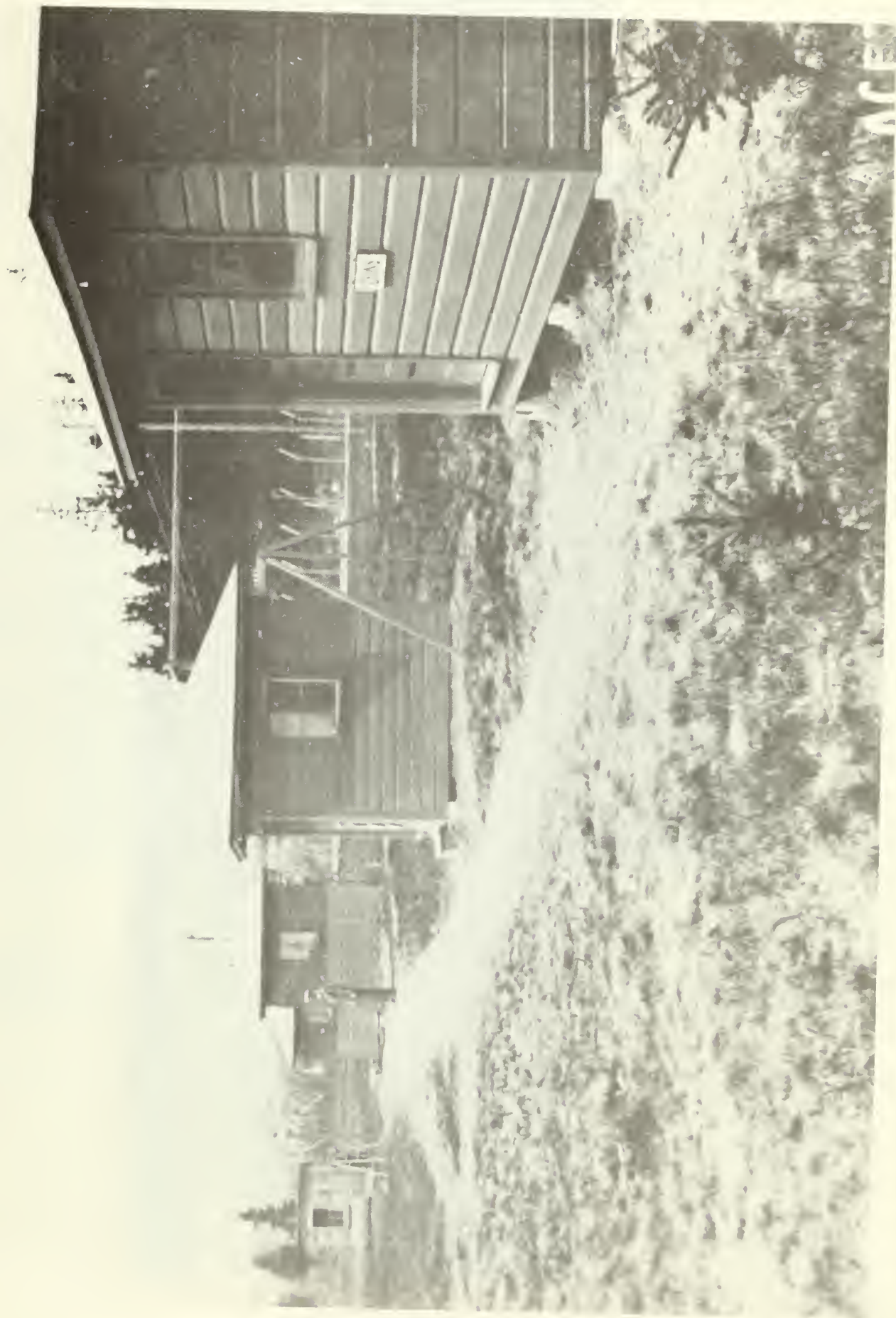
nullify or minimize the amount of static or noise while coupling the desired signal to the succeeding circuits to be detected and amplified for the purpose of signal reception or listening (Shafer 1983).

Each receiving shack had one of these loops rigged up just to the east of it. The area in which the shacks and loops were located became known as "The Field" (Taylor 1919:n.p.; photograph 10). These loops required a resistant ground connection provided by a crowbar driven into the soil. By accident, Proctor discovered that urine on the crowbar created circuit stability (Castner n.d.(a): Item 75).

On May 13, 1918, Fabbri reported, "Mr. Proctor's apparatus is now completed and will be . . . tested next Monday. . . ." He added that "tremendous amounts of antenna wire and insulators have been necessary

Photograph no. 8: Receiving shacks in "The Field"

Source: U.S. Naval History Center (NR & L 5636)





Photograph no. 9: Assorted receiving apparatus

Source: U.S. Naval History Center (NR & L 5630)



Photograph no. 10: "The Field". The circular device in the center background is a goniometer or variometer used for direct finding at low frequency (200 m or below).

Source: Jessup Memorial Library, Bar Harbor Maine

for the system. . . ." (Fabbri to Lieutenant J.C. Cooper, May 19, 1918; all correspondence cited, unless otherwise stated, from typescripts on file, Jessup Memorial Library). Absent following installation of the system, Pickard wrote to Fabbri in June, "Pleased to hear loop and ground still working well. . . . I trust you had no difficulty in maintaining the crowbar in proper humidity" (Proctor to Fabbri, June 1, 1918). The Proctor loop collector remained in use at Otter Cliffs for many years. In later refinements of the system, the outdoor frames and loops were replaced by smaller scale loops housed within the receiving shacks (Shafer 1983).

Though this loop was their most significant finding while at Otter Cliffs, Proctor and Pickard continued their experiments. The enthusiastic Fabbri followed it all closely, if not always with total comprehension. Of their work in June, Fabbri wrote that results so far were "constant and convincing."

The study of rectangles is most interesting. One that works in a new way, never seen or heard of before, born in the brain of Pickard, is nearing completion. If it works it should thrill the radiotic world (Fabbri to Cooper, June 8, 1918).

What Fabbri was carrying on about was apparently a "universal motion rectangle about 25 feet square," that could be tipped or revolved in any direction. The device was turned with four ropes manned by the station's seamen. Pickard expressed great hopes for the device, stating, "If this works we can throw the rest of the equipments into the scrap heap" (Pickard to Fabbri, June 1, 1918). But it did not. Despite initial success, it apparently never passed beyond the experimental stage (Castner n.d.(a):Item 48).

While Pickard's and Proctor's early experiments were in progress, A. Hoyt Taylor was making periodic visits to the station. Still possessed of a fondness for ground wire, Taylor set the seamen to work digging a trench 6 feet deep for installation of such a system. Not until the system was completely in place, did Taylor admit that the rocky soil of the island

made the ground wires inoperable. He wrote in June that the "Belmar system . . . [was] not applicable at Otter Cliffs on account of peculiar difficulty due to location. . . ." (A. Hoyt Taylor to D.N.C., June 5, 1918). But by then he had given plenty of work to the station's men, one of whom estimated the trench's length at one mile. While digging they had disturbed a rock pile full of snakes and unearthed a dead horse (Castner n.d.(a):Items 16, 33; Hovenden, personal communication, 1983).

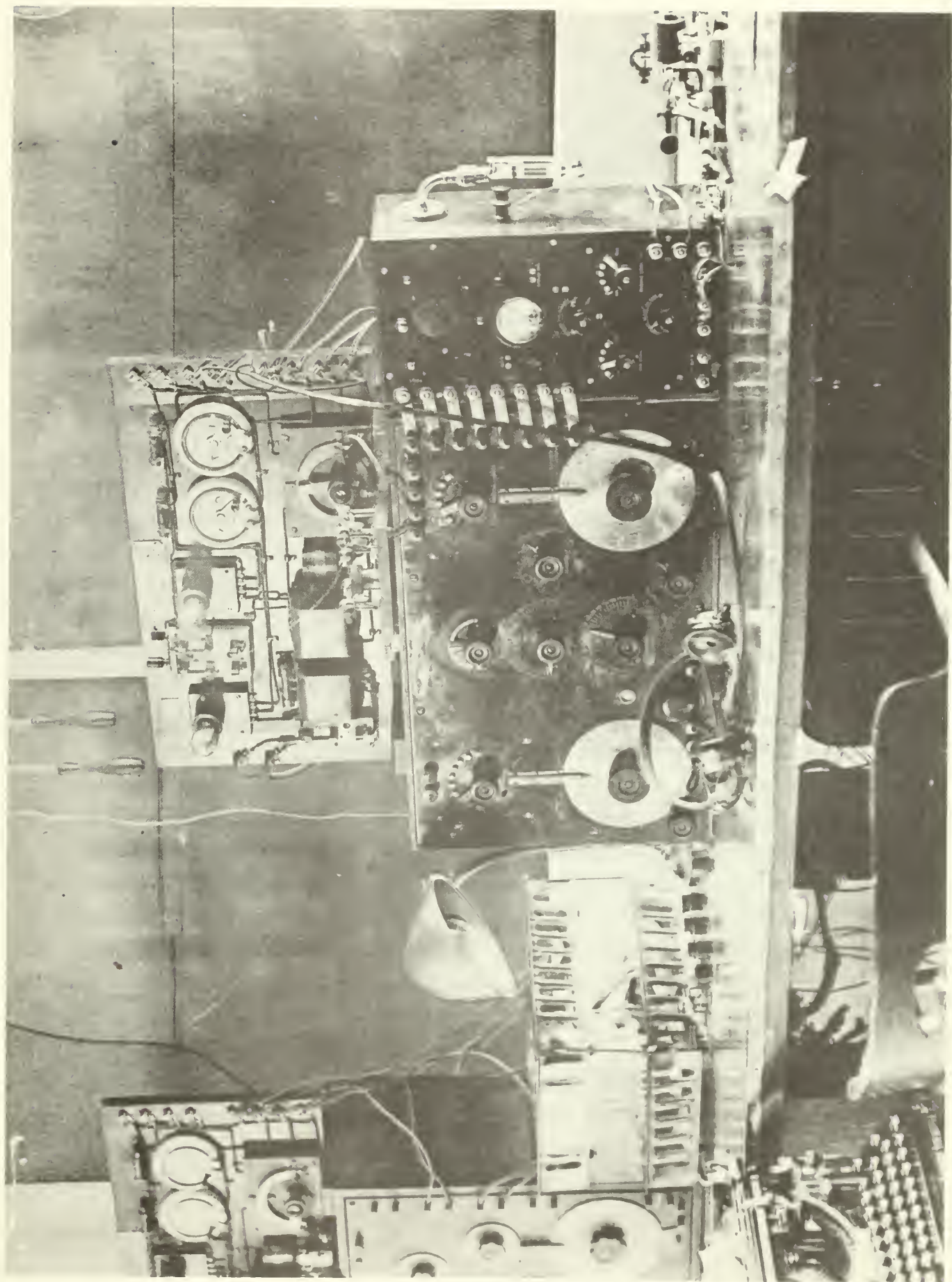
The station was willing to experiment with any means of improving reception. At one point long wave antennas were built on the far side of Otter Cove and 7/16-inch phosphor bronze wire was stretched from there over the water to the west spark tower (Castner n.d.(a):Item 19). In a letter from Fabbri to the District Communications Superintendent, the station commander suggests "throwing a two wire antenna from the southern tower across Otter Creek to a point on the opposite hill . . ." (The Acadian 30 June 1967:15)

Fabbri announced in June 1918 that a new structure was being erected next to the Administration Building. Called the Traffic Room, when completed it consisted of "a general traffic room, a transcribing room, and three sound proof rooms" (Fabbri to Lieutenant W.J. Carver, June 23, 1918; photographs 5 and 11). The latter three rooms had doors like ice boxes, and walls, floors, and ceilings of wood overlaid with copper. Over the copper was a layer of purple plush with another layer of wood on top of that. The ceilings had elaborate baffles. The building had a basement where batteries were stored and worked on (Castner n.d.: Item 63; Fred Grindle to Herbert Hovenden, n.d.).

In the letter that announced this construction, Fabbri mentioned the entire point was being sealed off with a cedar post electric fence (Fabbri to Carver, June 23, 1918; photograph 1). As early as March he was urging that the Navy secure the rest of the point. In a letter written in May he pointed out the station's ground and counterpoise wires extended well beyond the present reservation limits and thus could be "easily tampered with," as "summer visitors and strange faces are beginning to

Photograph no. 11: Interior of control room

Source: U.S. Naval History Center (NR & L 5623)



appear," and stories were circulating of German submarines in the area (Fabbri to Cooper, May 19, 1918; Casner n.d.(a):Item 11). Navy records show Fabbri did attempt and apparently succeeded in leasing the rest of the peninsula from its several owners (Bureau of Steam Engineering to Secretary of the Navy, May 13, 1918, on file National Archives).

The move to seal off the point was symptomatic of the station's growing fear of German infiltration or attack. Sentries kept reporting signal lights from surrounding mountains. Chief Harold Castner climbed the spark towers and concluded the men were simply observing stars seen through a series of waving trees. Still the post remained somewhat jittery. Fabbri had two machine guns installed. Once word came from area patrol boats that lights and small boats had been spotted during the night just offshore from the station, Cole and Castner made a subsequent night tour of the point's shoreline, but nothing materialized (Castner n.d.(a): Items 13, 38, and 42).

The station had already erected a four-story lighthouse above Otter Cliffs in 1917. It was used as a look-out until the end of the war. Located on the southeastern extremity of the point, it commanded views of Frenchman's Bay and the open sea (Hovenden 1979:3).

Perhaps the fears of German attack were not unfounded. The station logged occasional SOS calls from ships along the American coast who sighted or were fired upon by German submarines (Hovenden 1979:4). Once the station received word from Washington intelligence sources that it was in eminent danger of attack. A four-day watch failed to spot a submarine, but the base was entitled to be worried--it was an easy target and in line of sight for any submarine appearing at the mouth of Otter Cove (Castner n.d.(a): Item 44). Operator Hovenden recalls either this or another alarm which caused Raymond Cole to assemble the men and announce that they "were liable to wake up, any morning, and find . . . [themselves] halfway to the moon, as a result of a submarine attack" (Hovenden 1979:5).

During this period of concern, the garrison size was rapidly increased. Fabbri reported 50 men at the station in May 1918. Harold Castner, in a published reminiscence, stated that by the end of that year there were approximately 200 men on the base (Fabbri to Carver, May 28, 1918; Castner n.d.(a):13). Probably sometime in between a guard of 25 Marines was added to the station. The Marines manned five sentry posts along the electric fence as well as the sentry boxes at the main gate. This gate, the only access to the base, was located about 300 feet north of the Administration Building (Castner n.d.(a):Items 11 and 21; Fig. 7).

In response to increased numbers, in October, Fabbri reported that new barracks were under construction. He is probably referring to the large structures known as Barracks A and Barracks B. However, it is possible these barracks were built the year before as Castner indicates in his reminiscence. If this is true, then Fabbri's statement of October could refer to possible enlargements made on the original buildings (Castner n.d.(2): Item 21; pictures 49 and 50; Fabbri to S.C. Hooper, October 9, 1918; photographs 1, 12, 13, and 14).

Whenever completed, Barracks A was located about 50 feet southeast from the Administration Building and just northwest of the small water pump house. Barracks B was east of the Administration Building, about 250 feet away (Fig. 4). On Barracks A's first floor were located medical quarters and sick bay on the east end, mess hall and recreation hall on the west end, galley in rear center. In Barracks B, the station's supply department occupied most of the first floor, a dentist's office being located in what space remained. On the second floor both sailors and Marines were originally quartered. Later, a separate small building was constructed for the Marines just inside and to the west of the main gate (Castner n.d.(a): picture 121; Castner n.d.(b): 222-23, 484; photograph 15). Also sometime during the war, a cottage was built for Fabbri just outside the main gate (Castner n.d.(b): 248; photograph 16).

In the midst of submarine scares and construction activities, well-known figures from the field of radio experimentation continued to

Figure 7: 1934 Site Map

In map pocket



Photograph 12. Barracks in winter, and tents used prior to barracks construction.

Source: Jessup Memorial Library, Bar Harbor, Maine

Photograph 13: Barracks B and tower

Source: Jessup Memorial Library, Bar Harbor, Maine



Photograph 14: Barracks A

Source: U.S. Naval History Center (5645)





Photograph no. 15: Marine barracks and main gate

Source: Jessup Memorial Library, Bar Harbor, Maine



Photograph no. 16: Fabbri house ("The Cottage")

Source: Jessup Memorial Library, Bar Harbor, Maine

arrive. In August, Fabbri announced that Doctor C. A. Hoxie of General Electric Company had come from Schenectady, New York "with his equipment" (Fabbri to Lieutenant Commander H.P. LeClair, August 12, 1918). That equipment consisted of a very interesting new device, which was the first high speed recorder of radio signals (Hovenden 1979:3). It photographed onto a tape the dots and dashes of the radio signal. Then it passed the tape through developing and fixing solutions, a water wash, and finally a drier, before depositing the processed tape in a basket. All this was achieved at very high speeds. Then instead of one operator decoding an audio signal, several operators could be decoding various sections of the same tape message simultaneously (Castner n.d.: Item 61; Hovenden 1979:n.p.; photograph 17).

Hoxie was assigned a "small house" in the field to set up his invention which was still in the experimental stage when he arrived. He experienced some difficulty in overcoming the machine's extreme sensitivity to static, but with this problem solved, the "Hoxie Recorder" turned out to be a significant new development in radio technology (Castner n.d.: Item 61). In December Fabbri was boasting, "Yesterday we received 1000 words in 18 minutes . . ." with no mistakes.

We had asked Lyons to send as fast as possible but between 50 and 60 wpm is their limit and at that speed the Hoxie has time to stop and sharpen its pencil. If they could only punch sufficient tape there and send at 100 wpm we could put the cables out of business (Fabbri to Hooper, December 22, 1918).

Cole later recalled test tapes for the Hoxie going as high as 900 words per minute (Hovenden 1979:4). In March 1919, when a new model of the recorder came out, Fabbri wrote it was achieving 600 words per minute in the lab and could "certainly handle 200 wpm in service" (Fabbri to Taylor, March 28, 1919).

The Hoxie recorder always remained something of a delicate instrument. Fred Grindle, who worked the "Hi Speed Shack in the field," remembered that "it required some skills in making adjustments to the



Photograph no. 17: Hoxie and receiving sheds

Source: Jessup Memorial Library, Bar Harbor, Maine

speed of the sender, [and to] add tape while in operation." Yet the machine could still retain a working average of 100 words per minute (Castner n.d.(a): Item 61; Hovenden 1979:4; Fred Grindle to Hovenden, n.d.).

In September 1918, Dr. E.F.W. Alexanderson, also from General Electric, came to the station with one of his latest experiments--a new receiver with yet another system for static elimination (Fabbri to Hooper, September 14, 1918). This one had some specific purposes--to prevent the jamming of American signals by the Germans and to permit the Americans to "barrage," or jam, German signals. To achieve this, rubber insulated wire was laid out on the ground. At Otter Cliffs this wire stretched for two miles to the east and west, the west line extending over the waters of Otter Cove. Castner recalls it achieved very exciting results in some tests, but assumes it ran into later difficulties (Castner n.d.(a): Item 61; Hovenden 1979:4). Fabbri wrote in October that the Alexanderson barrage receivers was not as effective for static elimination as are "our own well-timed inventions, . . . yet when static . . . [was] directional," it produced fine results (Fabbri to Cooper, October 18, 1918).

In addition to increasing its scientific staff, the station continued to bring in very competent operators to ensure the quality of work at that level. Among them was Benjamin Seutter, a man who seems to have had phenomenal speed in hand-copying signal (Castner n.d.(a): Item 7).

Among the signals copied in October and November 1918, were German peace overtures to the American government and the final declaration of the Armistice. Since Otter Cliffs was the only United States station handling such communications, the operators here were the first to learn of such momentous developments (Hovenden 1979:6-9; Castner n.d.(a): Item 85). In fact, the Germans contacted the Otter Cliffs station directly, causing a great deal of consternation since, according to Castner, only the President and the Secretaries of War and Navy were authorized to communicate with the enemy. Following swift

implementation of security precautions and receipt of signed permission from the Secretary of the Navy, the radiomen replied to the Germans. In turn, the German peace proposals were radioed to Otter Cliffs for transmission to the President. In the months immediately after the war, the station's radio traffic picked up, as thousands of messages were handled from incoming United States soldiers and immigrants (Ellsworth XI:40; Hovenden 1979:10).

There was plenty of work to keep them busy while on duty and when off duty a variety of amusements were available to the base operators, seamen and Marines. Baseball teams were formed; there was ice skating on island lakes in winter (Castner n.d.(a): Items 33 and 49). A short walk to the point's southeast shore would take one to the Otter Cliffs themselves, rising one hundred feet perpendicular from the shoreline. On stormy days an impressive surf could be observed here. Bored with wave action, they could always push boulders over the edge (Castner n.d.(a): Item 8). Entertainment of another type awaited them at "the Sink" in Bar Harbor, which Castner described as "a second rate dance hall" (Castner n.d.(a): Item 33). For the more "refined," there were occasional parties at Eagle Lake, frequented by the likes of Chief Yoemanette Abbie Partridge and local high school teachers. These affairs featured boating and group singing (Castner n.d.(a):24).

Transportation between the station and Bar Harbor was provided by truck or by a 100 foot long sub chaser. The boat was skippered by Ensign Hodgkins, whose careless steering led to occasional groundings. It docked just below the Administration Building at the Steel Pier--a substantial dock probably left over from country club days (Castner n.d.(a); Item 71; photograph 18).

Besides stepping up receiving activities, the base greatly expanded its transmission capabilities in the months following the Armistice. A new transmission station was built at Seawall, some 10 miles west of Otter Cliffs. Cole remembers, "It had two 220' lattice, wooden, guyed antenna towers, with a very extensive ground system and was connected to the



Photograph no. 18: Steel pier in Otter Cove

Source: Jessup Memorial Library, Bar Harbor, Maine

. . . [main base] by a 'submarine cable'. . . ." It was operated by remote control from the Traffic Room at Otter Cliffs. The new installation with its 12 KW arc transmitter and 5 KW spark transmitter, gave the station the ability to contact ships at sea. It replaced a very rarely used one KW set (Hovenden 1979:5).

The Otter Cliffs station was kept busy the spring and summer of 1919 and the auxiliary seawall station was to prove its worth. In May the station maintained radio contact with Navy seaplanes, one of which completed the first trans-Atlantic flight. In June it handled the enormous amount of messages to and from President Woodrow Wilson while he was on shipboard, en route to Versailles. It assisted a British dirigible making the first non-stop transatlantic crossing by an airship, that July. Operator Charles Ellsworth received commendation for his performance in this last matter (Hovenden 1979:8; Castner n.d.(a): Item 68).

It was in the midst of all this activity that Alessandro Fabbri resigned as post commander. In preparation for his departure, he bought the five north acres of the base's core area and sold them to the United States government. James Palmer sold the south seven acres to the government about the same time (Deeds Records Vol. 547:16; Vol. 551: 148; Vol. 552: 555). His accounts with the government settled, Fabbri was released from active duty on June 30, 1919. He left as a lieutenant, having been promoted earlier that year. Castner believed Fabbri resigned because, with the war over, the station's importance was diminishing and it had reached an operational peak it could not surpass (Castner n.d.(a): Item 72).

For his contributions Fabbri was awarded the Navy Cross in 1920. In the citation that accompanied the award Secretary of the Navy Josephus Daniels wrote that:

Under Lieutenant Fabbri's direction, the station was developed from a small amateur experimental station, until at the end of the war it was the most important and efficient in the world (Hovenden 1979:11).

Less than two years later Fabbri died from pneumonia, following a hunting trip (Hovenden 1979:11).

The station continued to carry a great deal of traffic for some months after Fabbri's retirement. It handled commercial traffic, including civilian telegrams, until well into 1920, when Radio Corporation of America (R.C.A.) began taking over this business (Hovenden 1979:10; Ellsworth XI:40). After that the workload fell off sharply. Already the garrison size had been decreased. One reminiscence by an anonymous seaman states that in 1920 there were only 60 men on duty (Anonymous n.d.: n.p.).

The top floor of Barracks B no longer quartered men; it was instead used as a recreation room and, on occasion, a movie theater. One winter night, the movie projector caught fire. The audience made its escape through the windows to the snow banks below, but, reportedly, the projectionist was killed and the barracks burned to the ground. Castner dates this incident to the winter of 1919-20, but an anonymous reminiscence suggests it happened a year or two later (Castner n.d.: Item 77; Anonymous n.d.: n.p.). A blurred photograph post-dating the fire, shows one or two, one-story buildings of modest dimensions west of the site of Barracks B; possibly these were built as replacements for facilities lost in the blaze (photograph on file, Jessup Memorial Library). But the barracks was never rebuilt--there was simply no longer the need for a building of such proportions, as station business dwindled (photograph 19).

From photographs and a reminiscence from this period, it seems that station officers had to be imaginative to find chores to keep the men occupied. Buildings were repainted, roads were lined with white-washed rocks, and the front porch of the Administration Building was extended. According to a seaman who served under him, one officer liked to use this porch "in lieu of a quarterdeck, to which he aspired. It seems to me he even had it extended to give himself more pacing room" (Anonymous n.d.: n.p.). A "swan pond" was also created which

extended from just east of the Administration Building, almost as far north as the guard house (Fig. 7). A new entrance road from the east was built for the station, along with a new entrance gate perhaps 350 to 400 feet east of the Administration Building (photographs on file, Jessup Memorial Library; anonymous n.d.: n.p.).

Though reduced in size, the station was not superfluous. Otter Cliffs remained an ideal spot for trans-Atlantic radio communication. Therefore when, in 1929, John D. Rockefeller announced plans for a new road there, he met the opposition of the Navy Department. The road was to loop around Otter Point along the shoreline and pass through the station's reservation. The scenic road would be built at Rockefeller's expense and then donated to the National Park Service, but first the Navy would have to leave Otter Point. It took years for a settlement to be reached. Finally the Navy agreed to close down the station. In return it was allowed to use NPS land on Schoodic Point, across Frenchman's Bay, for the construction of a new radio station. This base was constructed and remains in operation at the present time (Hovenden 1979:12; Dorr 1948:34-41).

In the summer of 1934 the Navy began dismantling Otter Cliffs Radio Station. All buildings were razed. On February 28, 1935, the transfer to Schoodic was completed (Ellsworth XI:40; Hovenden 1979:12).

Rockefeller's road was thereafter built through the site area, running north-south, between the former locations of the Administration Building and Barracks A. In 1939 a monument was dedicated to Alessandro Fabbri at the site, on the location of the Administration Building. (Hovenden 1979:11-12). The monument consists of a plaque attached to a granite boulder atop a landscaped knoll. A parking lot was created just to the west (Dorr 1948:14). By now the Park Service was administering the twelve acres which were formerly the core area of the radio station. At some point during this period, the Park Service placed a small ranger station on the site--roughly in the location of the old water pump house. In a picture of a 1961 reunion of Otter Cliffs radio

Photograph no. 19: Aerial view of Otter Cliffs Radio Station

Source: Jessup Memorial Library, Bar Harbor, Maine



station veterans, the ranger station appears in the background. It was probably removed shortly thereafter (photographs on file, Jessup Memorial Library; personal communications, Acadia National Park, service maintenance personnel, 1983).

The most noticeable existing remains from the radio station days are foundations scattered across the site area, particularly those of Barracks B. They are a reminder of a base which was for a time the most important radio station in the United States.

L. Research

As originally conceived, archeological testing proposed in the research design was intended to fulfill both NPS policy mandates and legal responsibilities under environmental and cultural legislation and regulations. Prior to the August 1983 fieldwork, research efforts were directed at obtaining information from previously published sources and from individuals familiar with the archeology and history of the area. This was done to structure appropriate field testing strategies, collate data on the scope and nature of resources we might expect to encounter, and prevent damage to subsurface resources during the testing. In addition, this information could help with interpretation of artifactual materials and features. Although review of secondary historic sources at the Denver Service Center, Rocky Mountain Regional Office Library, Acadia National Park, and telephone contacts with the Maine State Historic Preservation Office and area archeologists indicated that some resources might be encountered, a large number of extant remains was not expected. Unfortunately, there were no historical base maps or cultural resources inventories for the area available to us at this point.

Once testing began, it became obvious that there were many foundations, areas of slumped fill, features and 19th century artifacts hidden under the heavy underbrush. Project timing and scope did not allow full documentation of these resources during August so testing concentrated on areas where project impact would be heaviest and where an historic aerial photograph (no. 19) showed structures and other evidences of human activity.

Following the August testing, additional in-depth research was done to provide more data about human land use and modification in the area; to determine function, affiliation, and age of the structural remains and artifacts found; and to provide historic background data so an accurate and complete assessment of project impact could be made.

Armed with additional data, a November survey of the area--following a killing frost and leaf fall--located a number of features not visible during the August work. These were mapped, photographed, described, and a cultural resources base map prepared for the site, based both upon history research and the archeological data (Fig. 3).

During the project, research was conducted at the following Colorado institutions:

Denver Public Library
National Oceanic and Atmospheric Administration Library, Boulder
Denver Service Center, National Park Service
Rocky Mountain Regional Office Library, National Park Service
United States Geological Survey map files, Denver

In Maine, research was done at:

University of Maine at Orono
Bar Harbor Historical Society files and museum
Jessup Memorial Library, Bar Harbor
Hancock County Courthouse
Northwest Harbor Public Library
Acadia National Park files
Abbe Museum, Acadia National Park

A limited search of Naval Archives was conducted in the National Archives, Washington, D.C.

Telephone contacts with numerous individuals and institutions elicited a great deal of information. In Washington, D.C. these contacts included:

Department of the Interior Library
National Park Service Lands Office
Naval History Center Library
Naval History Center Museum
Naval Research Laboratory
Naval Facilities Engineering Command

Maine resources included:

Maine State Library in Augusta
Maine State Historic Preservation Office
Winter Harbor Naval Station

The Naval Engineering Command in Fort Wanemi, California was also contacted.

Several interested amateur radio groups and individuals provided excellent information. These include:

Mr. Rexforth Matlock, St. Petersburg, Florida
Mr. Fred Grindle, Bar Harbor, Maine
Mr. Herbert Hovenden, Chicago, Illinois
Mr. John Shafer, Boulder, Colorado
Antique Wireless Association

M. Methodology--Field Investigations

Following review of maps, planning documents, and relevant secondary historical sources, proposed development areas were drawn onto large scale topographic maps of the site to establish testing parameters. The test area lay between the Ocean Drive and Otter Cliffs Road; it extended for ca. 300 feet north of the connecting road and 150 feet south (Fig. 1). The maps were laid out in a 25-foot interval grid with test locations numbered on the grids. Extra tests were plotted along water and utility corridors (see Figs. 1 and 2).

The site was surveyed by four individuals walking at less than ca. 50 foot intervals; cultural features were noted and flagged. A baseline was established relative to NPS metal markers along the east/west connecting road. The site was staked out and accuracy of test locations checked against existing topographic survey markers. Test numbers were marked on the flagging tape at each test site.

Discussion with project designers established areas of maximum and minimum ground surface disturbance; e.g., the sewage system would impact a 150 foot square area to a depth of 2+ feet, effectively obliterating any near-surface cultural resources. Restroom and water storage facilities would also have a heavy impact upon resources. Water and utility lines would extend some 5 feet into the ground, disturbing the surface to a width of ca. 10 feet. With selective hand cutting and careful design, trails and picnic sites would have minimal impact upon the site since only the small, shallow pit fireplace would disturb the ground surface to any depth. For the most part, parking lots would be placed along already disturbed roadside areas. Maximum impact areas were tested at 25 foot intervals or less; minimal impact areas at 50 foot intervals.

One hundred twenty-four shovel tests were dug at the site and seven more along the Otter Creek Road. These cylindrical tests averaged 18 inches across and about 1.8 feet deep; in most cases they continued down until hitting sterile subsoil (see Table 1). Tests at 100 foot intervals were dug deeper and soil samples taken of all strata. Tests were excavated by natural strata, using a shovel and trowel. With the exception of heavy clays and disturbed rock/gravel fill, all excavated soils were screened through 1/4-inch mesh. Test locations that had to be relocated due to roots, foundations, etc., were noted and mapped relative to original stakes.

Soil profiles were carefully checked in all tests and samples taken from each stratum on selected tests. A smear sample and verbal description of changes in soil color, texture, composition, and the artifact content were recorded in the individual field books. Artifactual materials were kept separate by strata. With the exception of coal, coal by-products, and intrusive imported gravels, all subsurface artifactual items were collected for analysis. (Only a representative sampling of coal, etc., was bagged for analysis where large quantities were found.) A selective surface collection of artifacts was made; modern debris was not collected but was recorded in the field notes.

All measurements documenting site strata and features were given in feet and tenths of feet. Arbitrary numbers assigned to each row/test were used to identify provenience on artifacts. Many subsurface features found during the August testing were identified only by the shovel test number until they could be mapped and given a feature number in November.

In November, following extensive research, the area was resurveyed and additional features, then visible, were flagged. Subsurface features identified by the August shovel tests and historic photographs were traced along their full length and mapped. Markers with test numbers had been buried in the backfilled test holes, enabling close coordination with the earlier testing. The site was systematically mapped, using an alidade and plane table with the NPS metal markers as beginning reference points. Surveyors' stakes from a previous topographic survey were also used to verify sightings. Features were numbered consecutively as mapped in; each one was then individually measured, described, photographed in black and white and in color. Features within the proposed development zone were drawn to scale. Some features just outside the proposed development area were also mapped with the alidade but scale drawings were not made of these due to lack of time and the onset of winter.

Structural remains and dumps relating to the core site but located well outside the project area were examined, photographed, and noted in the field books. Approximate locations for these features were indicated on the cultural resources base map.

Only one feature was excavated during the November mapping. While clearing away leaves and humus to expose the rest of a foundation, Feature 21, a brick sill, was discovered along the foundation wall. This sill was excavated technically, by trowel. Scale drawings were made.

Following the discovery of early 19th century materials along the proposed water line corridor, the design was changed to shift the line to

a second location; seven more shovel tests were excavated. This proposed line was also found to be within a culturally sensitive zone, so, following discussions at the site among DSC and park personnel, it was decided to shift the well site to an area close by the road. The water line from the well to the comfort station could then be run close to the utility line, lessening the resultant impact upon cultural resources (Fig. 4). Park Maintenance Chief Dick Young, DSC Designer David Reeser, and Archeologist Diane Rhodes also worked out an agreement whereby underground power lines running from the site to an existing power source near the park boundary would be placed in the road shoulder.

Based upon this agreement, a pedestrian survey of the proposed utility corridor north of the site was conducted by three people walking at 15-20 foot intervals. Structural remains and artifacts were found just south of the Fishhouse Road, and just inside the park boundary, so shovel tests at 30 foot intervals were put in at these two areas. The rest of the line was not tested; no evidence of significant cultural resources was found. Only modern roadside debris, consisting primarily of modern liquor bottles, was noted.

Most of the Otter Cliffs Road is well-maintained, with a fairly wide shoulder of hauled-in fill gravel and soils. If the line is kept within a foot or two of the road, there is little possibility of disturbing any significant cultural resources.

N. Methodology--Laboratory

Artifacts and soil samples were shipped back to the Denver Service Center (DSC) for curation, project [archeological] cataloging, and analysis. This work was performed according to procedures set up for previous DSC laboratory projects. Following project and report completion artifacts will be stored at the park. Special forms were developed for artifact analysis to insure standardization of data and complete descriptions of chronological and functional attributes. Coal, coal by-products, shell, flat glass, stone, and charcoal were given a lot number; all other artifacts were given a unique number comprised of

locational data and a discrete artifact number, e.g., artifact number A.T17-3.22 indicates that this was the 22nd consecutive artifact catalogued from shovel test number 3, row 17 at Acadia.

Since much of the chronological and functional interpretation of the site would be based upon ceramic analysis, various kinds of wares were defined and a date range established. Following the suggestions made by Yakubic (1983:105) ceramics were grouped primarily by their paste with subdivision within groups by glaze and decorative techniques.

Dating of many items was based upon published catalogs, lists of maker's marks, manufacturers and manufacturing dates. In the case of glass artifacts, dating was often based upon the manufacturing techniques employed. Jill Yakubic's definitions of manufacturing techniques were used in this report for most of the glass at the site (1984).

Denver Service Center radio personnel familiar with early day electronics helped a great deal with identification and analysis of the electrical wire and equipment.

Dating of structural materials is often based on nail types. Wrought nails were utilized from the earliest period of European occupation in the New World through much of the 19th century. The cut nail may date as early as 1790, with use throughout the 19th century (Yakubik 1983:128). Wire nails were first manufactured during about 1880 but were not in general use until the end of the century.

Table 1 includes data from field notes and results of laboratory examination of soil samples. The soil descriptions in Table 1 are not meant in any way to be definitive of soils in the area but serve only as a basis for comparison among tests to distinguish areas of disturbance or potential significance. Using uniform lighting in the laboratory, soil description was done by the author based on the U.S.D.A. guide for soil texture classification (Fig. 8 with Table 2).

Figure 8: Soil Texture

In Appendix 1, Table 2

O. Discussion

Testing was done to establish whether significant features or activity areas lie within or near the proposed development zone. A number of surface and subsurface remains, most related to the Otter Cliffs Radio Station, were found. Most of the activities associated with the station could be established from historical research but site use prior to 1900 is less well documented. Soil analysis provided some clues to site use. Tests done in undisturbed areas near the site indicate that basic soil types on this portion of Otter Point consist of a humic matter over a dark brown sandy friable loam which often contains rocks from pea gravel to stony sizes (Table 1). The underlying soils are a culturally sterile dark red-brown sandy silt, also containing many stones. Often the sterile underlying soils contained, or were separated from the upper levels, by lenses of grey/white sandy decomposed volcanic tuff (Chapman 1970:12).

Type and depth of strata varied among the various tests, but some general patterns can be seen. In areas where a great deal of land modification occurred during the construction of the radio station facilities, a mottled heavy grey/green marine clay appears as fill around foundations and near structures. Often the clay overlay an old topsoil level. In some cases the earlier ground surface had been heavily modified and the clay lay directly over the sterile red subsoil but in other cases the clay overlay 19th century artifacts contained in a uniform dark brown silty loam, which in turn overlay the natural, undisturbed red soils. It is unclear whether the clay was hauled in from outside the area or borrowed from certain sectors of the site. Many of the culturally sterile tests in the northwestern section of the site contain a great deal of clay; this area was modified by the Navy for a small pond. The clay may have been used to slow water seepage from the pond, or may have been part of the underlying strata exposed when topsoils were removed.

Soils in recently disturbed zones such as the existing parking lot south of the connecting road contained mottled clays and large quantities of small, imported grey crushed gravels. Large amounts of unmodified

gravel and rocks in shovel tests done in the northeastern corner of the site helped confirm the old road bed location shown on historic maps.

Although past archeological work and history studies have documented use of the area by prehistoric groups, no artifacts were found that indicate the presence of prehistoric peoples in the project area.

Site artifactual and structural remains suggest three major periods of occupation: an early-19th century farmstead; the Aulick Palmer house and later country club (1884 to 1917); and the Otter Cliffs Navy Station (1917-35).

Evidence of the farmstead centers around Feature 33 (Fig. 9, photograph 20), portions of a dry-laid coarse-grained reddish granite foundation. Pearlware, creamware, and stoneware ceramic sherds were concentrated along the foundation walls and in test pits within a 50 foot radius of the feature (Table 3; photographs 21-24). An orange or faded red transfer print pearlware tea cup fragment and a dark cobalt blue hand-painted pearlware rim were found in a rodent burrow immediately west of the feature. Eight feet south of the feature, a test turned up creamware plate fragments, hand-painted pearlware, a black glass sherd, and a cobalt blue shouldered tea cup sherd of pearlware or white earthenware. A test 20 feet south yielded a shell-edged pearlware plate fragment with a mend hole, and a plain-rimmed creamware plate fragment appeared in a test immediately to the west. Yet another shovel test, 60 feet to the northeast, disclosed a pharmaceutical bottle with the embossed legend, "E. HARTSHORN & SONS/BOSTON, MASS./ESTABLISHED 1850." A kaolin pipe bowl, probably dating to the 1800s, was found some distance west of Feature 33. This ceramic assemblage supports a date of from 1800 to 1825 for earliest use of the structure.

Archival material places the Young family on Otter Point in the 1860s. An 1886 deed places Robert Young's "premises" perhaps as little as 100 feet from Feature 33. These premises might have been established

0 1 2
scale of feet

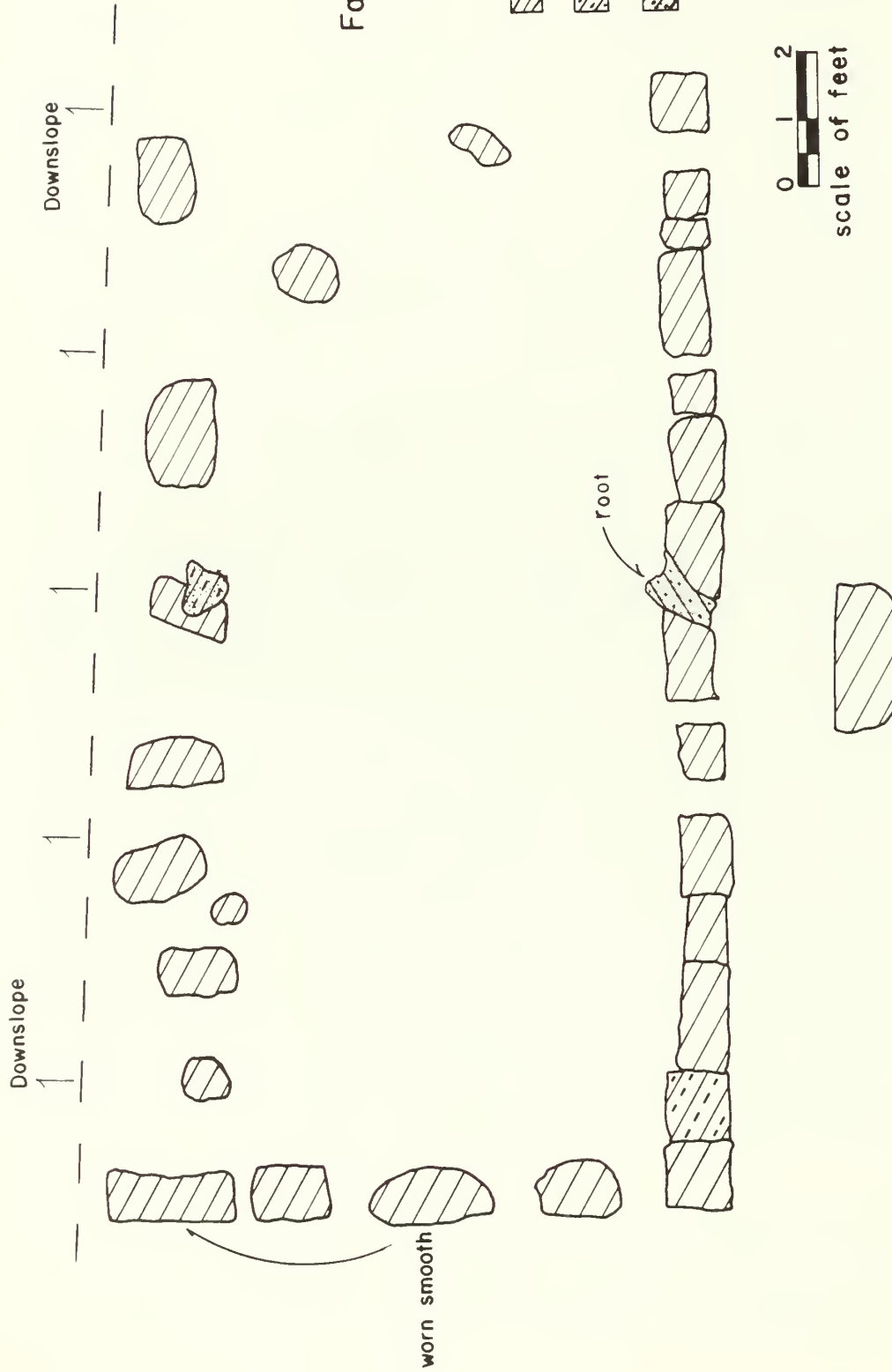


Figure 9: Feature 33. Plan view at ground surface.



Photograph no. 20: Feature 33, granite foundations

Source: Acadia National Park



Photograph no. 21: Creamware shards

Source: Acadia National Park



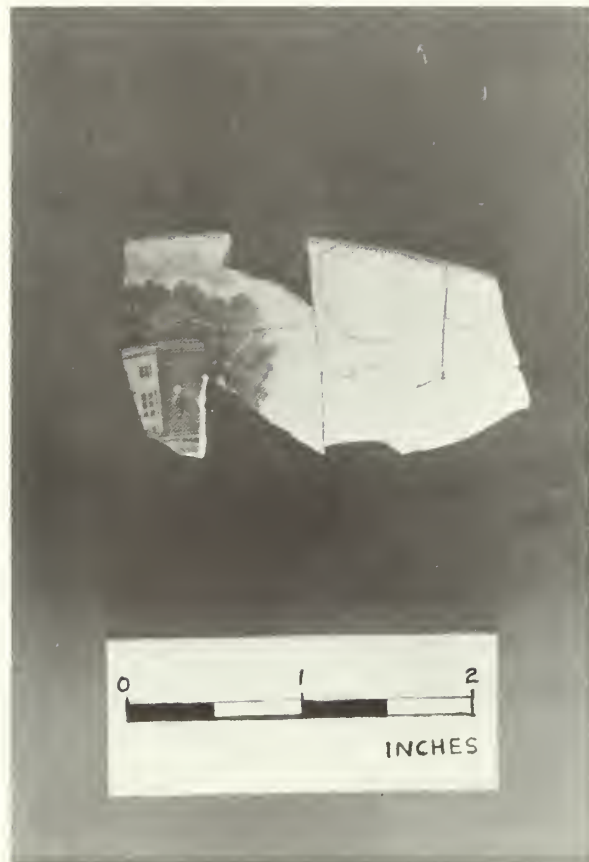
Photograph 22: Pearlware with mend hole

Source: Acadia National Park



Photograph 23: Hand-painted pearlware

Source: Acadia National Park



Photograph 24: Red transfer-print pearlware tea cup

Source: Acadia National Park

by an earlier generation of the Young family and the feature could be associated with them. It is also possible that the feature was one of the buildings Lewis Bracy deeded to Elbridge Young in 1869. However, the north boundary of the property described in that deed seems to be some 150 to 200 feet south of the feature. Although no association can be made between the feature and a particular member of the Young family, it is quite possible that the family constructed it.

The stone-lined well (Feature 13) adjacent to Feature 33, may also date from the Young family period (photograph 25). It is probably outside the boundaries of Aulick Palmer's property and its manner of construction argues against its dating from the Navy period. If the well and Feature 33 were contemporaneous, Feature 33 may have been a fairly small building, its south wall perhaps no more than 15 feet across.

Visible debris from Feature 13 dates to the Navy station years--culinary items, electrical equipment, furniture, appliances, machine-made glass, and a metal box with "U.S. NAVY" embossed on it (photograph 26). Under the top level of modern debris, the Navy period items lie over a layer of ash and charcoal that includes some artifacts that show heat damage. Some of the remains from the rubble of the burned Barracks B may have been deposited in the well, a convenient nearby receptacle.

Ground disturbance caused by disposal of Navy debris following the fire may explain why so little of the Feature 33 foundation remains. Heavy equipment clearing a path to the dump may have pushed aside portions of the foundation, leaving the present mound of earth within the south and west foundation lines (Fig. 9, photographs 20 and 27). No excavation or testing of the well was done, but it is possible that discarded 19th century materials may lie within.

Both foundation and well may date to the Young family period, but it is possible that the building predates the well and had been abandoned before the well was constructed from borrowed foundation materials. Both



Photograph no. 25: Feature 13, stone-lined well and dump

Source: Acadia National Park



Photograph 26: U.S. Navy box

Source: Acadia National Park



Photograph 27: Feature 33, foundation corner

Source: Acadia National Park

features lie on/just outside the original Radio Station fence perimeters established in 1919 (figure 6).

Another feature possibly associated with a 19th century farmstead is number 47, a stone-lined well at the southeast edge of the site (photograph 28). The feature is near the supposed south boundary of the lands Elbridge Young secured from Bracy and may have served to supply water for his farm. There is, however, no additional artifactual evidence to support this idea. The feature is at present 5 feet deep and may contain discarded items below the upper level of silt. Two other wells, one of which was artesian, may also date to the 1800s. These were situated in the central open area just south of the connecting road. These wells were used by the Radio Station; one has been buried (feature 28; figure 3) and the exact location of the other has not been determined.

In 1884, Aulick Palmer, having acquired the southern portion of the site area, built a house known as "Otter's Nest," located where the Fabbri Memorial now stands (Fig. 6). The house was converted into the Country Club of Mount Desert Island in 1910. No above ground evidence of the structure remains, but some artifacts associated with the building are eroding from the cliff beneath it. At least a few, such as an amethyst-colored machine-made bottle base, probably dated from the Palmer residence or country club periods (photographs 29 and 30).

When the Otter Cliffs Navy Station opened in 1917, Otter's Nest housed the entire operation for a time and then was remodeled to become the administration building. Most of the trash on the cliff side beneath it dates from this period of its use. The thick, hard white earthenware plate and saucer fragments found here are probably Navy issue. The battery parts, porcelain on/off switch, and low voltage insulators recovered are almost certainly of Navy vintage. One of the insulators is marked "BRUNT," a company marketing a wide selection of insulators during that time period. Spent cartridge cases dating to the World War I period were also observed here. One segment of brass strip wiring



Photograph no. 28: Feature 47, stone-lined well



Photograph 29: Decorated whiteware

Source: Acadia National Park

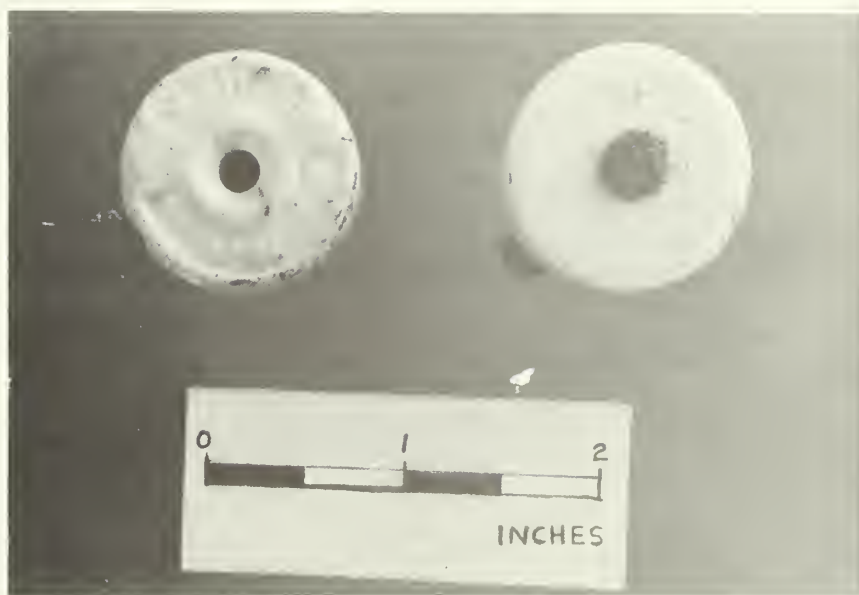


Photograph 30: Medicine bottle



Photograph 31: Ground wire

Source: Acadia National Park



Photograph 32: Insulators. Split insulators typically used in interior wiring

Source: Acadia National Park



Photograph 33: Battery part--carbon center conductor from carbon-zinc battery; 1.5 volt cell, used in telephone or radio. Also known as a number 6 cell or an "A" battery.

Source: Acadia National Park

recovered here may have been used for the experimental ground wire radio reception system developed by A. Hoyt Taylor (photographs 31, 32, 33).

Some of the cliff-side artifacts may have been bulldozed over the side from the house site when the Fabbri Memorial area was landscaped in the 1930s. However, building materials such as wire nails, window glass, and asbestos make up only a small part of the artifacts of the cliff side. Quite probably the area was used as a dump while the Navy station was in operation.

Soon after the Navy station was opened, construction began on a variety of buildings whose foundations comprise the bulk of the site's structural remains. A 1919 map of the facility shows 12 structures; these are the Fabbri cottage, a guard house, the administration building and traffic room, barracks A and B, the pumphouse, and 4 identical receiving shacks in the Field. The core area of the station was quite small, with fences cutting close to the administration building on the west, less than 100' south of barracks A and about 40' east of barracks B, then angling north to include the guard house (Fig. 6 shows a later, expanded boundary).

On 1919 maps only the small traffic room (operating building) and steel mast receiving tower appear directly south of the Administration Building. Over the next decade, site plans show a succession of installations and changes near the traffic room. A fire protection system was built in 1920 as were a waterline, pumps, a "4" gate and a "blow-off". Other additions include a manhole (1921), a hydrant (?) (1924), and an engine room and fuel oil tank (1927). Maps also show 2 dry wells just to the southeast of the traffic room, and another dry well, a new septic tank and sewer line to the southwest (Fig. 7). By 1934 major structures just south of the Administration Building included the "transmitting building and operating room," and the engine room cum "oil house". (U.S. Navy 1934).

Interviews with two former radiomen indicate that there were underground passageways and/or rooms somewhere near the traffic room/administration building (Grindle 1983; Hovendon 1983). Archeologist Emerson Pearson visited the site in the 1960s and explored two different underground rooms; one was entered through a circular brick feature and the other through a sort of "corrugated metal drain" (Pearson 1983). At this time, the rooms and their walls were intact, and debris from Radio Station activities littered the floors. Features 2 and 3 may be related to these underground structures, or merely to later utility construction for the station. However, feature 2 is ca. 20' south of any of the improvements shown on the map (Fig. 7). (Photographs 5, 34, 35, 36, and 37, and figures 3 and 10 illustrate these features.) Features 4 and 5 are two cut-granite steps installed for the landscaping following construction of the Fabbri Memorial (photograph 38).

The station's two largest buildings were Barracks A and B, built during 1918 and 1919 (photographs 13 and 14; Fig. 6). These two identical barracks were built in a short squat "T" shape with long porches on the front. Between 1920 and 1921, a 25' by 40' coal storage room was added to each building (Navy, 1920, 1921). Feature 6 is thought to be a remnant of the porch or foundation of Barracks A (Figs. 3 and 6; photograph 39). Figure 3 shows exposed portions of the concrete; subsurface remains extend to the west, creating a lighter colored strip of grass visible in some photographs.

Shovel test R4ST1-S uncovered a layer of shell just beneath the sod on the exterior side of this foundation. Within this layer of shell were wire nails and two "split" type insulators, one with a patent date of February 3, 1920. A galvanized metal water pipe found in the test paralleled the long axis of the foundation at about .7 feet below the surface (Table 1). This is probably the waterline shown in September, 1920 fire protection plans. In the meadow southeast of the barracks, a shovel test disclosed a sewer pipe (photograph 40). Its southeast-northwest orientation is puzzling because the early site plans show the Barracks A sewer line some distance due west of this location,



Photograph no. 34: Feature 2, stone-lined hole



Photograph no. 35: Feature 2, boards and fill

Source: Acadia National Park



Photograph no. 36: Features 2 and 3, area near monument



Photograph no. 37: Feature 3, slumped area

Source: Acadia National Park

ACADIA
Fabbri Memorial

Feature 2
profiles

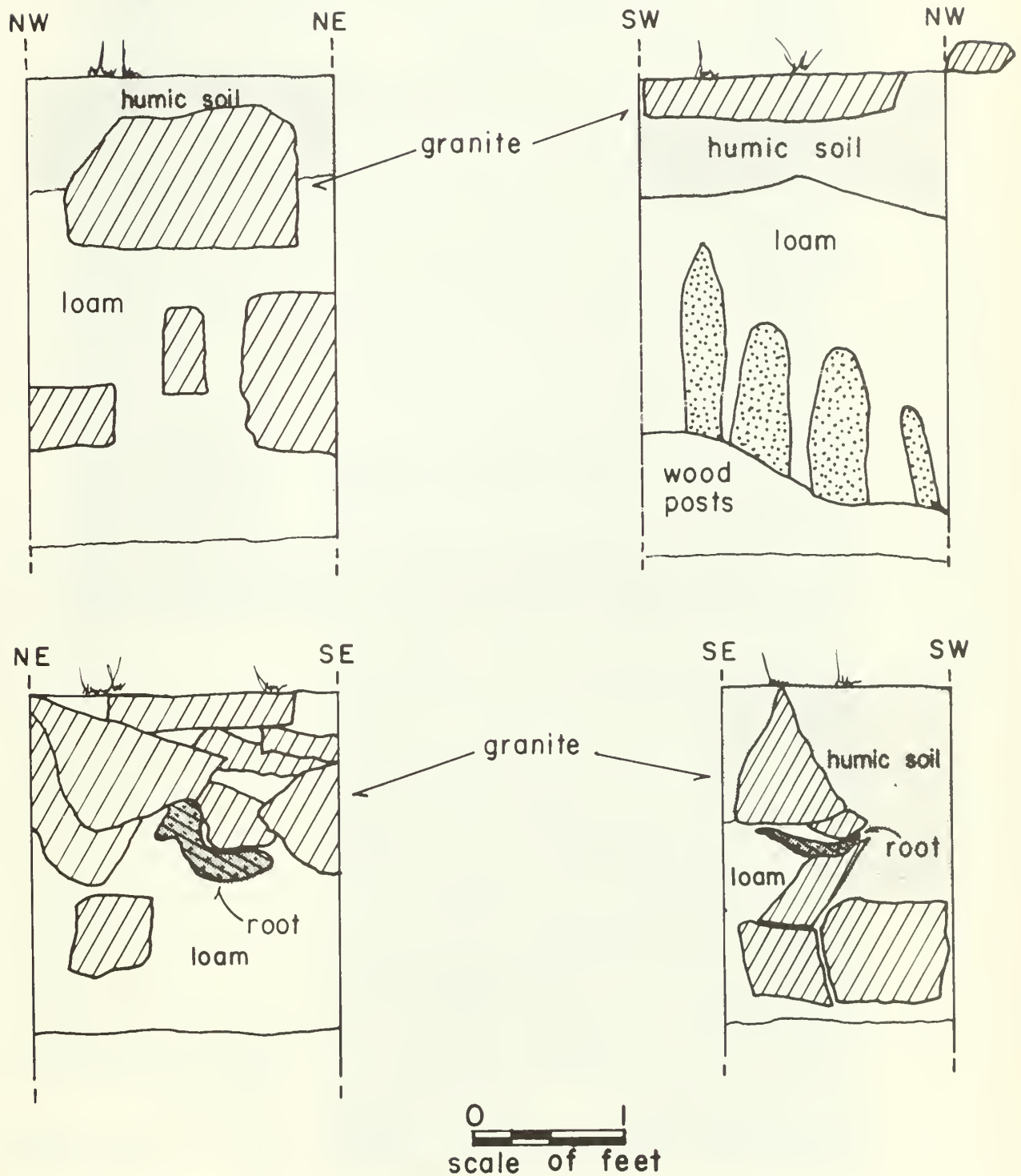


Figure 10: Profiles of Feature 2, wood- and stone-lined depression



Photograph no. 38: Feature 4, cut granite steps at monument



Photograph no. 39:
Feature 6, Barracks A
foundation

Source: Acadia National
Park



Photograph no. 40: Feature 29, buried sewer pipe and shovel test R6ST5-S

Source: Acadia National Park

draining southwest towards Otter Cove. There were no other water, sewer or heat lines in this vicinity shown on any of the site plans. It is possible that this line was associated with the short-lived ranger station built just east of Barracks A in the 1940s. Feature 25, a concrete "curb" found some distance northeast of the sewer pipe, may also have been associated with the ranger station, or with the earlier pump house.

Feature 20 is the foundation of Barracks B which burned in January, 1923, within two years of its construction (photographs 41-44; figures 6 and 7). Test pits within and near the foundation yielded predictable artifacts such as coal, ferrous lumps, wire nails, and concrete chunks. One test within the foundation, near a slumped area, produced a piece of electrical conduit (photograph 45). Excavation of the barrack's basement window sill (Feature 21) turned up evidence of the fire; e.g. large quantities of burned and shattered glass; lumps of charcoal, glass, and coal fused together; and a heated porcelain sherd (Fig. 11; photograph 43). Features 18 and 19 are probably the porch steps from Barracks B (photograph 41). A slumped area within the foundations of the barracks contains some sort of pressurized piping; this may have been the heating plant for the barracks. (Navy maps dated 1921 show a heating duct extending east from the barracks to a nearby garage.) A small storehouse for coal was added behind Barracks B sometime between 1920 and 1921.

Feature 9 was uncovered in two test pits. This feature is a foundation line which may be associated with the Navy Station garage erected circa 1920 (Figs. 3 and 6; photograph 46). The foundation extended well into the ground. The garage burned at the same time as Barracks B. This is corroborated by a thick layer of ash and burned structural debris found south of the foundation wall (Table 1). The concrete in Feature 9 was typical of that used in the rest of the Navy station structures--a sandy textured mixture containing large pieces of crushed grey gravel aggregate. Hard whiteware sherds, wire nails, bricks, mortar, and large quantities of coal and combustion by-products appeared in tests which revealed the feature. It should be noted that



Photograph 41: Features 18 and 20, Barracks B steps and foundation



Photograph no. 42: Feature 20, Barracks B foundation

Source: Acadia National Park



Photograph no. 43: Feature 21, Barracks B foundation and sill



Photograph no. 44: Feature 22, Barracks B basement and slumped fill

Source: Acadia National Park



Photograph 45: Conduit used to connect antenna cable and power cables

Source: Acadia National Park

ACADIA
Fabbri Memorial
Feature 21

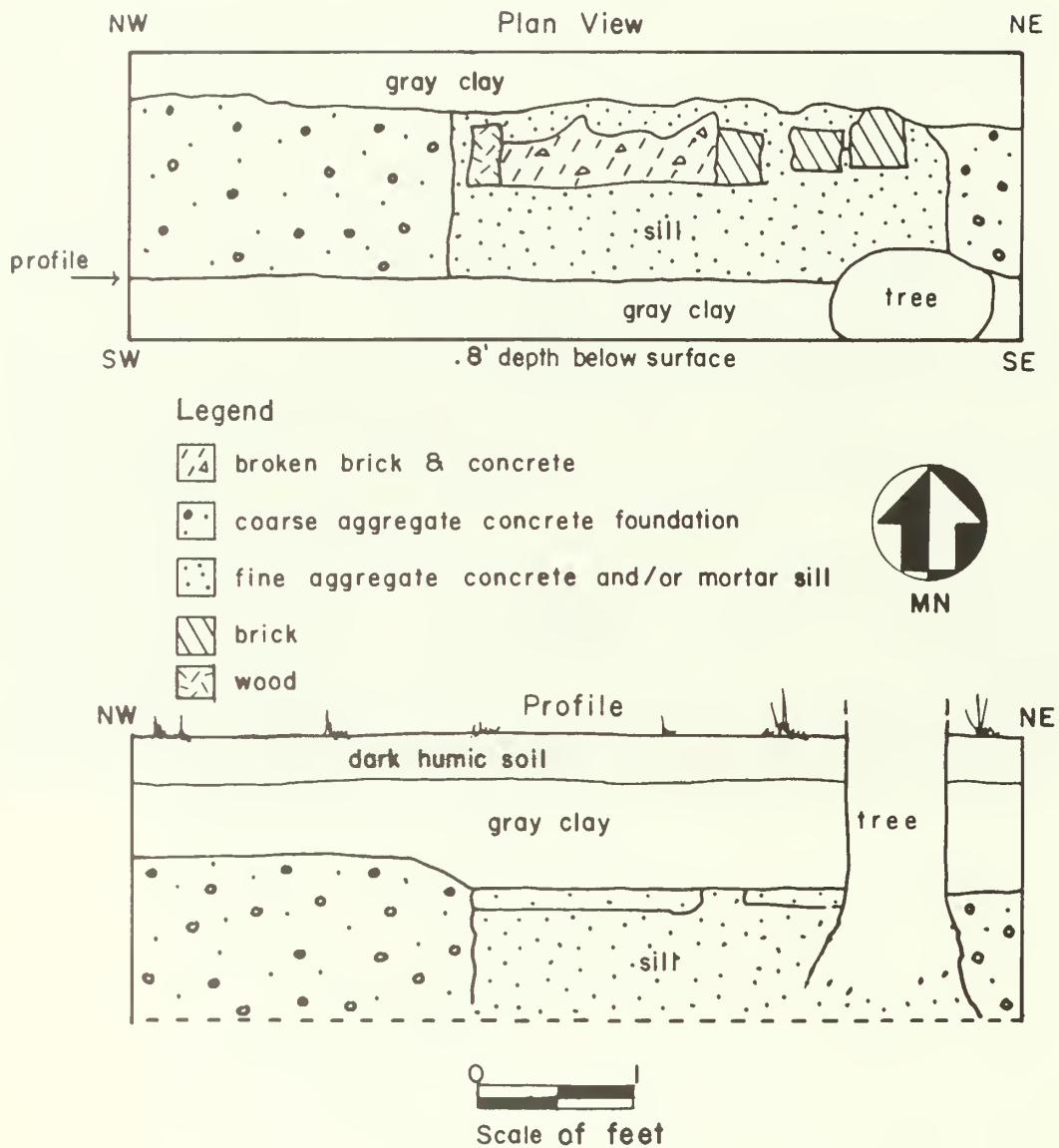
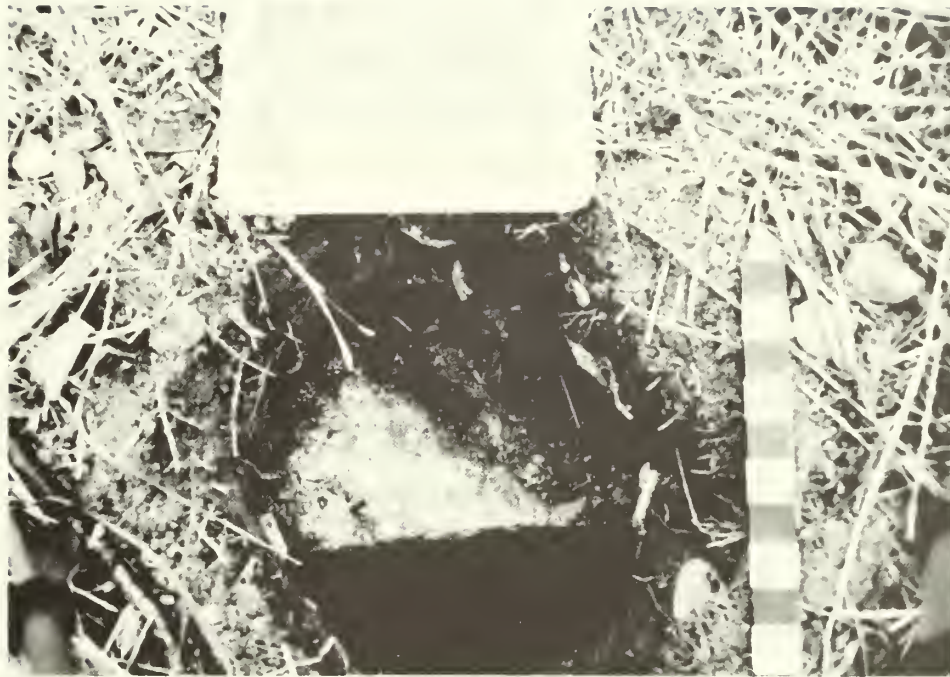


Figure 11: Feature 21, foundation and window sill, Barracks B



Photograph no 46: Buried foundation at test R14ST3

Source: Acadia National Park

while 1921 map overlays show the garage 20' south and some distance west of the test area, 1921 fire protection plans show it close to the feature 9 area. No other structures are close to the area on any of the site maps so there may be inaccuracies in these maps and plans, or other unrecorded building(s) may have existed here.

Just east of Barracks B, features 23 and 23A appear to be remnants of a concrete slab sidewalk (Fig. 12; photographs 47 and 48). Northeast of this barracks are features 31 and 32--a series of three contiguous concrete tanks with interconnected drainage, concrete covers, and a depressed area just to the north (photographs 49 and 50). Naval maps (Fig. 7) identify these features as a cesspool built after 1928. A small nearby "quarters" building originally constructed sometime after 1921 also burned in 1923.

Access to the base by land was originally via a road which can still be traced through the woods north of Barracks B. Three granite blocks (Features 15, 16, and 17) bar traffic from this roadway which continues westward across the site from the present Otter Cliffs Road (photograph 51). About 100 feet east of present-day Ocean Drive the old roadway branches. The north fork of the road proceeds down to the beach where a fish house was present prior to 1888 (see dotted line on Figure 3; see also Fig. 7.) The south fork headed for the main gate of the base and then on to the Administration Building. A whiskey bottle found near the road bed has a manufacturing date of between 1902 and 1908, indicating use of the road during the Otter's Nest years (photograph 52). The existence of the fork down to the fish house suggests most of the road dates from the 1880s or earlier and that the road may generally follow an old property line which marks the northern edge of Navy station property (Fig. 6).

A number of features of undetermined function (Nos. 35, 36, 38, 39, 40 and 41) are clustered at the northeast corner of the site. These include a brick-filled depression, metal tie downs, and cut granite blocks (photographs 53-57; Fig. 3). Subsurface remains of what appear to be a

ACADIA N.P.
FABBRI MEMORIAL
FEATURES 23, 23A AND 24

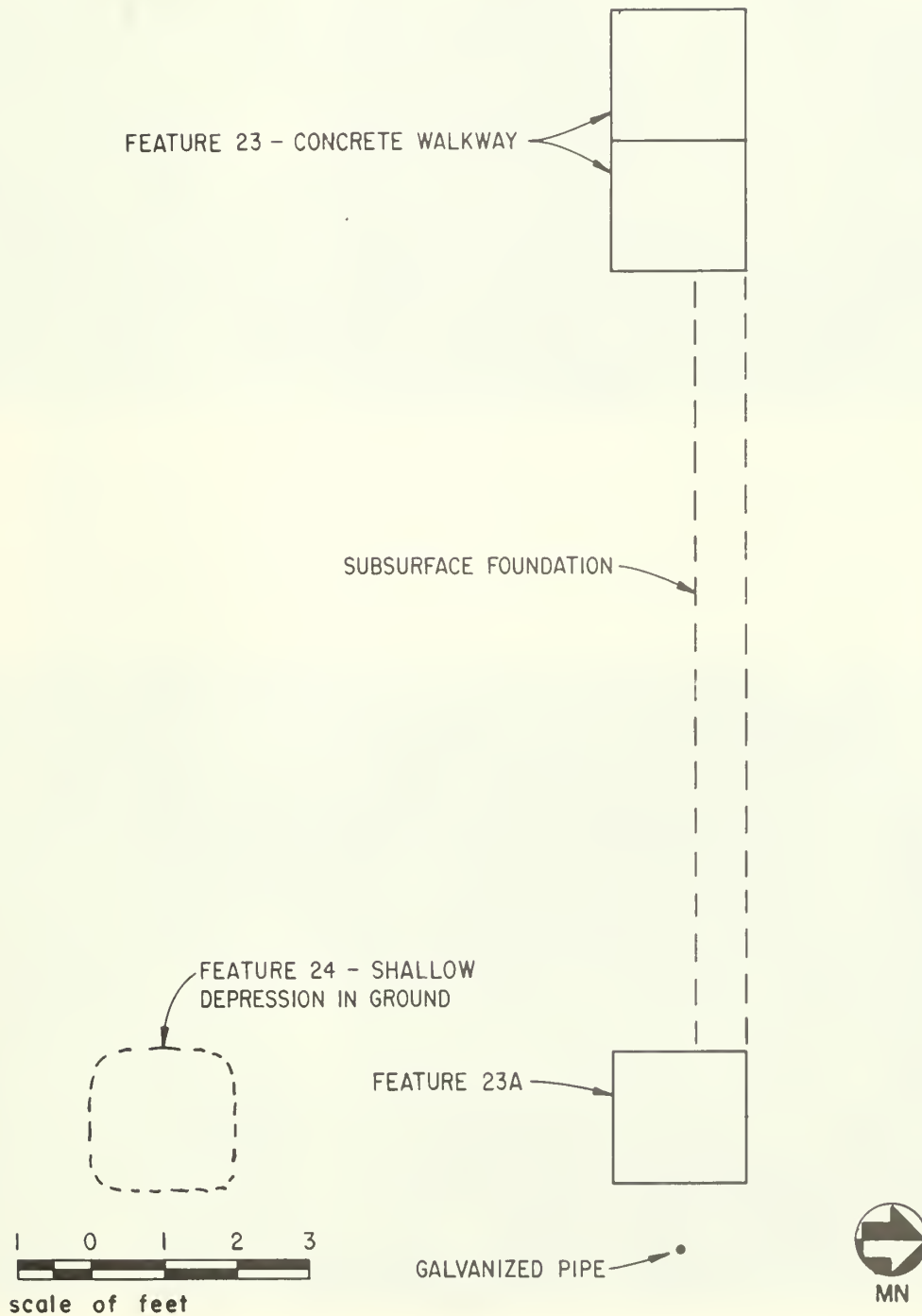


Figure 12: Features 23, 23A, and 24, concrete walkway and shallow depression



Photograph no. 47:
Feature 23, walkway

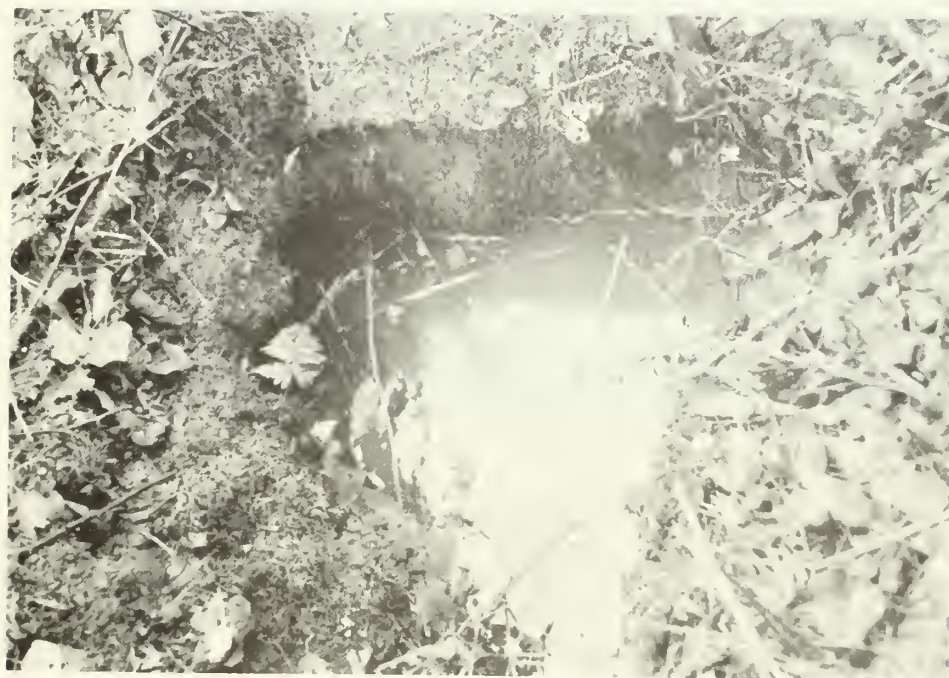


Photograph no. 48: Feature 23A, walkway

Source: Acadia National Park



Photograph no. 49:
Feature 31, septic system



Photograph no. 50: Feature 31, septic system

Source: Acadia National Park



Photograph no. 51: Features 15-17, cut granite blocks

Source: Acadia National Park



Photograph 52: Whiskey bottle

Source: Acadia National Park



Photograph no. 53: Feature 37, cut granite blocks

Source: Acadia National Park



Photograph no. 54: Brick and roofing materials within angular depressed area



Photograph no. 55: Feature 35, Station entrance area

Source: Acadia National Park



Photograph no. 56: Pipe, cut granite, tie downs



Photograph no. 57:
Feature 35, Station
entrance area

Source: Acadia National
Park



Photograph no. 58: Feature 50, subsurface brick and mortar

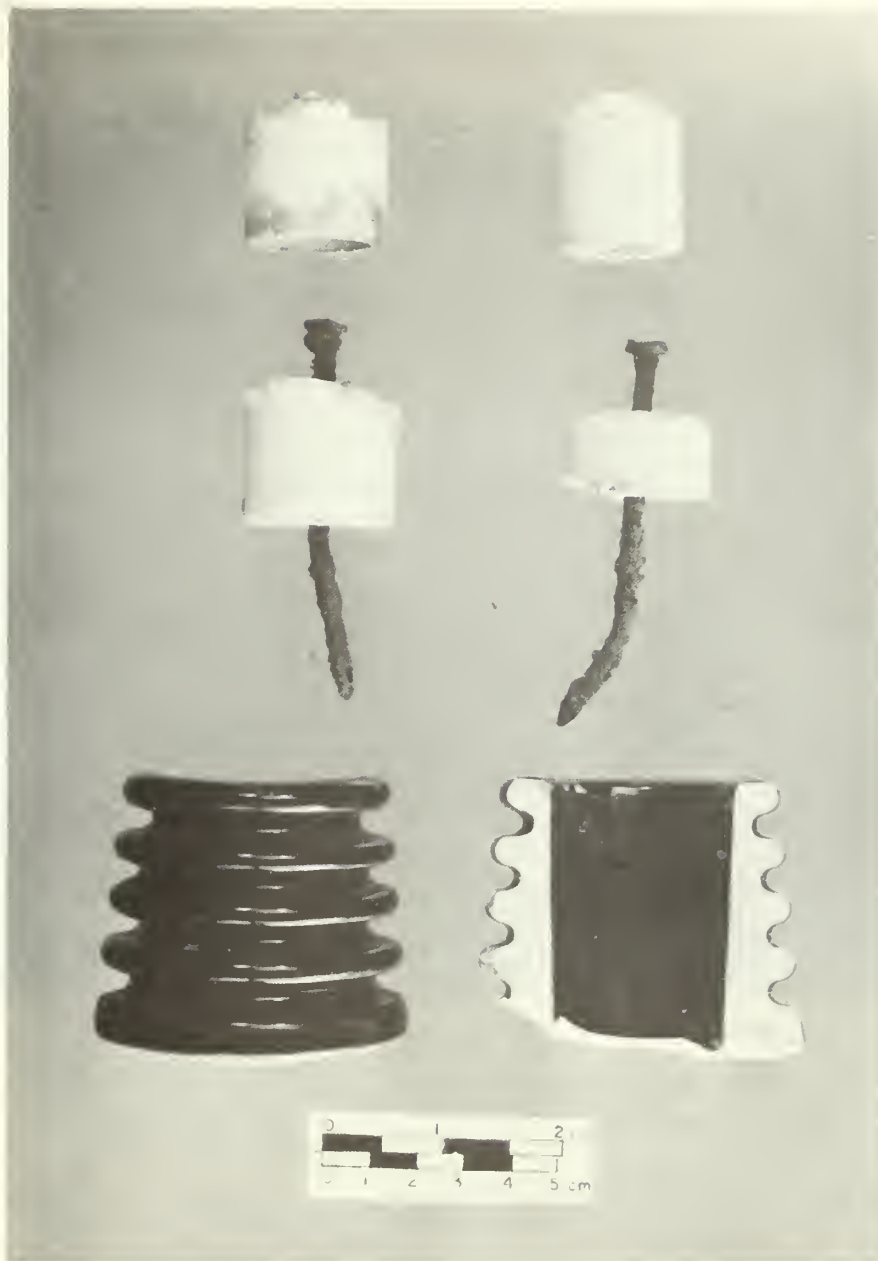
Source: Acadia National Park

brick and mortar walkway were found in a nearby test R3ST11 (photograph 58). They may have been associated with the entrance and main gate. However, the old roadway appears to have run slightly west of these features and so may not have passed through them. Old photographs and maps show a line of high voltage wiring and transformers here, and a high voltage insulator and high voltage fuse were recovered from this area (photographs 59 and 60). (The fuse was of a type in common use during the 1910s and 1920s.) It is most likely that this cluster of features had something to do with the transmission of power for the base (Figs. 6 and 7) and/or for the entry/guard station.

The raised linear feature (Feature 42) contains pieces of granite, and a number of cut granite blocks are scattered nearby (Fig. 3). This feature is the earthen dam for the "swan pond" or "Radio Pond" that the Navy built between 1919 and 1921. It may have been drained by 1934 since it no longer appears on site plans for that period (Fig. 7).

Feature 37 is just to the west across the Park Loop Road. This feature consists of a concrete foundation and an attached flat concrete slab or sidewalk which now overhangs the cliff edge. Bricks are scattered around the foundation and walk/slab. Although Figure 6 shows the guard house in this location a 1924 map indicates the "guard house [was] sold June, 1924" (U.S. Navy, 1924). Changes in this area probably occurred when the main entrance was moved to the eastern edge of the station. The guard house does not appear on 1934 maps (Fig. 7).

Features 1, 7, and 8 are manholes for electrical wiring used by the Navy station (photographs 61-64; Figs. 3 and 13). Holes in the interior walls of these features show where the electrical conduit was inserted and its directional orientation. The large number of conduit holes in the north wall of Feature 7 indicates a great deal of conduit extended out from it towards Barracks B. At first it was thought that the basement of the barracks housed the main power generator. However, judging from 1920s site maps, the main generator was probably located in/under the traffic room. Figures 6 and 7 show a number of manholes but due to



Photograph 59: Insulators. Split insulators (top two rows) typically used for interior structural wiring with one wire each of the two led on either side of the insulator. The bottom insulator is from a high voltage transformer

Source: Acadia National Park



Photograph 60: High voltage fuse--fast acting with rapid heat response to break the circuit

Source: Acadia National Park



Photograph no. 61: Interior of Feature 7 showing electrical conduit

Source: Acadia National Park



Photograph no. 62: Interior of Feature 7 showing hangars for high voltage electrical wiring



Photograph no. 63: Feature 7 exterior

Source: Acadia National Park



Photograph no. 64: Feature 8, cut granite block over manhole

Source: Acadia National Park

ACADIA N.P.
FABBRI MEMORIAL
FEATURE 8

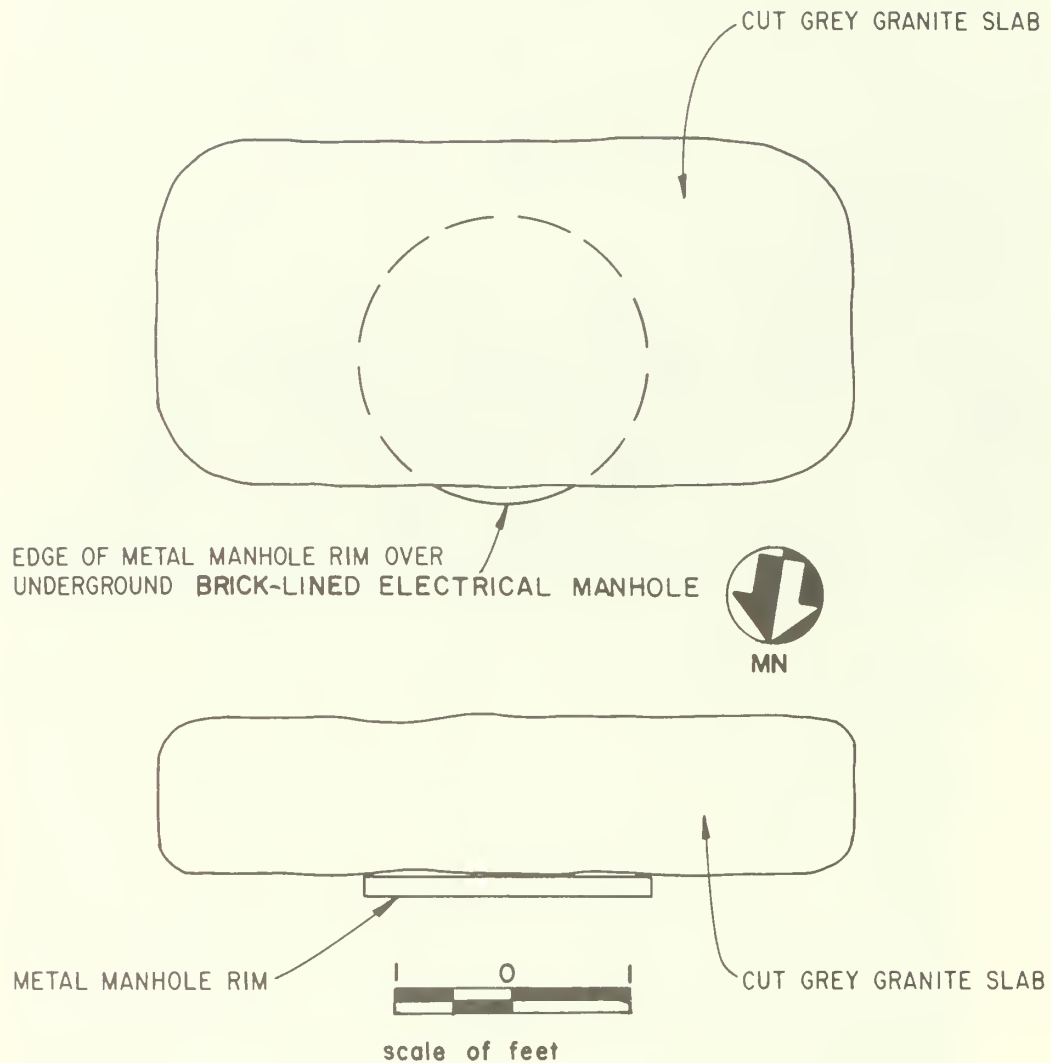


Figure 13: Feature 8, granite slab and manhole



Photograph no. 65: Brick from Feature 35

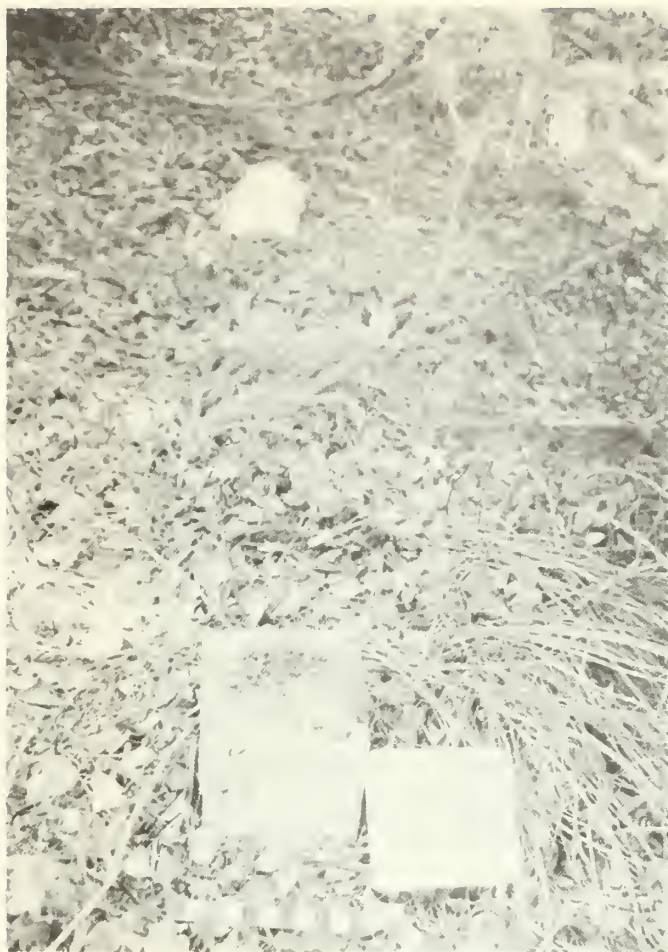
Source: Acadia National Park

poor quality of these maps, it is unclear how many brick lined manholes existed during the Radio Station period. Bricks from Navy station constructions (found at Features 7, 35, and 44) often bear the embossed legend, "DB Co." Though the makers have not been identified, the brick is probably of local manufacture (photograph 65).

The appearance of conduit holes on the south wall of Feature 8 and historic maps indicate electrical lines passed through here down to The Field area where the Navy's receiving shacks and reception systems were set up. Features 43 and 48 are probably the concrete supports on which two of the receiving shacks rested (Fig. 6; photographs 66 and 67). A "split" type insulator was found on the surface at Feature 48 (photograph 59). These shacks were small, semi-permanent buildings (photographs 8 and 17). These structures were shown on 1919 and 1920 maps but were replaced by "experimental booths" by June of 1921; a notation on a 1924 map shows 3 "small C.G.P structures--no longer used" (U.S. Navy, 1924).

The concrete foundation of a small building, Feature 46, is also located in "The Field" (photograph 68). Its location corresponds to building 12 (experimental booths) shown on figure 6. Seven strand copper wire found within the foundations (photograph 69) was the same type of wire used by the Naval station for a variety of electrical purposes. This small building may have been used by J.A. Proctor and Greenleaf Pickard in the course of their radio reception experiments, or the foundations may be remnants of the building where the Hoxie recorder was located. This machine, used for the high speed recording of radio signals, was large and delicate, and would have required a permanent structure to accommodate it. It is known that Hoxie was assigned a "small house" in the field to set up his invention (photograph 17).

Features 44 and 45--a concrete floor near a sunken area containing a number of large granite boulders--correspond to an electrical manhole and Radio Direction Finder house and coal storage shed built between 1924 and 1927 (Fig. 7; photograph 70). (The slumped area is probably the



Photograph no. 66:
Feature 43, concrete pier
support for receiving shack



Photograph no. 67: Feature 43, wiring

Source: Acadia National Park



Photograph no. 68: Feature 46, foundations



Photograph 69: Seven-strand copper wire

Source: Acadia National Park



Photograph no. 70: Features 44 and 45,
concrete slab and granite-filled depression

Source: Acadia National Park

remains of the manhole.) By 1934, the structure was known as the "Radio Direction Finder House" (U.S. Navy 1934).

By September of 1920 a 50,000 gallon water tower had been built in the meadow east of Barracks A to replace the two 1500 gallon tanks originally installed in the pumphouse. The tower was probably erected as part of the new fire protection system. Feature 26/27 includes four concrete footings from the tower (photographs 19, 71-74; Fig. 14). Several wells were drilled in this area; a pumphouse sat over the artesian well and a second well, while a third well was located a few feet east (U.S. Navy, 1924). Both pumphouse wells predate 1920. (Note: 1919 maps show a well inside the pumphouse and note that "well back of pumphouse is an artesian well with a 6 [inch] casing" so the pumphouse may have been moved or enlarged by 1924 to cover both wells.) The second well is probably feature 28; precise location of the artesian well is unknown though the naval site plan places it just north of the water tower. (See Figs. 3 and 7).

Several major dumps were situated in the central area (Fig. 3). Dump No. 1 definitely dates to the Navy period. A goblet found in this dump has approximate manufacturing dates of 1915 to 1930, and other glass recovered here probably dates from the Naval station as well (photograph 75). Copper wire and a number six dry cell battery part were found in a nearby test pit.

Some items in Dump No. 2, (identical black leather shoes, hair tonic bottles, and semi-porcelain sherds), indicate use by the Navy. An amethyst-colored milk bottle also recovered here argues that the dump may have been in use before World War I while another milk bottle with "1937" embossed on the base indicates the dump was still in use after the Navy left (photographs 76 and 77).

At Dump No. 3, deteriorated batteries similar in size and shape to automobile batteries, found in their packing, may date the feature to the Navy period. Close by is a concrete slab, Feature 25, which may have



Photograph no. 71: Feature 26, support pad at northeast corner of water tower



Photograph no 72: Feature 26, support pad at southeast corner of water tower

Source: Acadia National Park



Photograph no. 73:
 Feature 26, support pad at
 southwest corner of water tower



Photograph no. 74: Feature 26, support pad at northwest
 corner of water tower

Source: Acadia National Park

ACADIA N.P.
FABBRI MEMORIAL
FEATURE
26/27

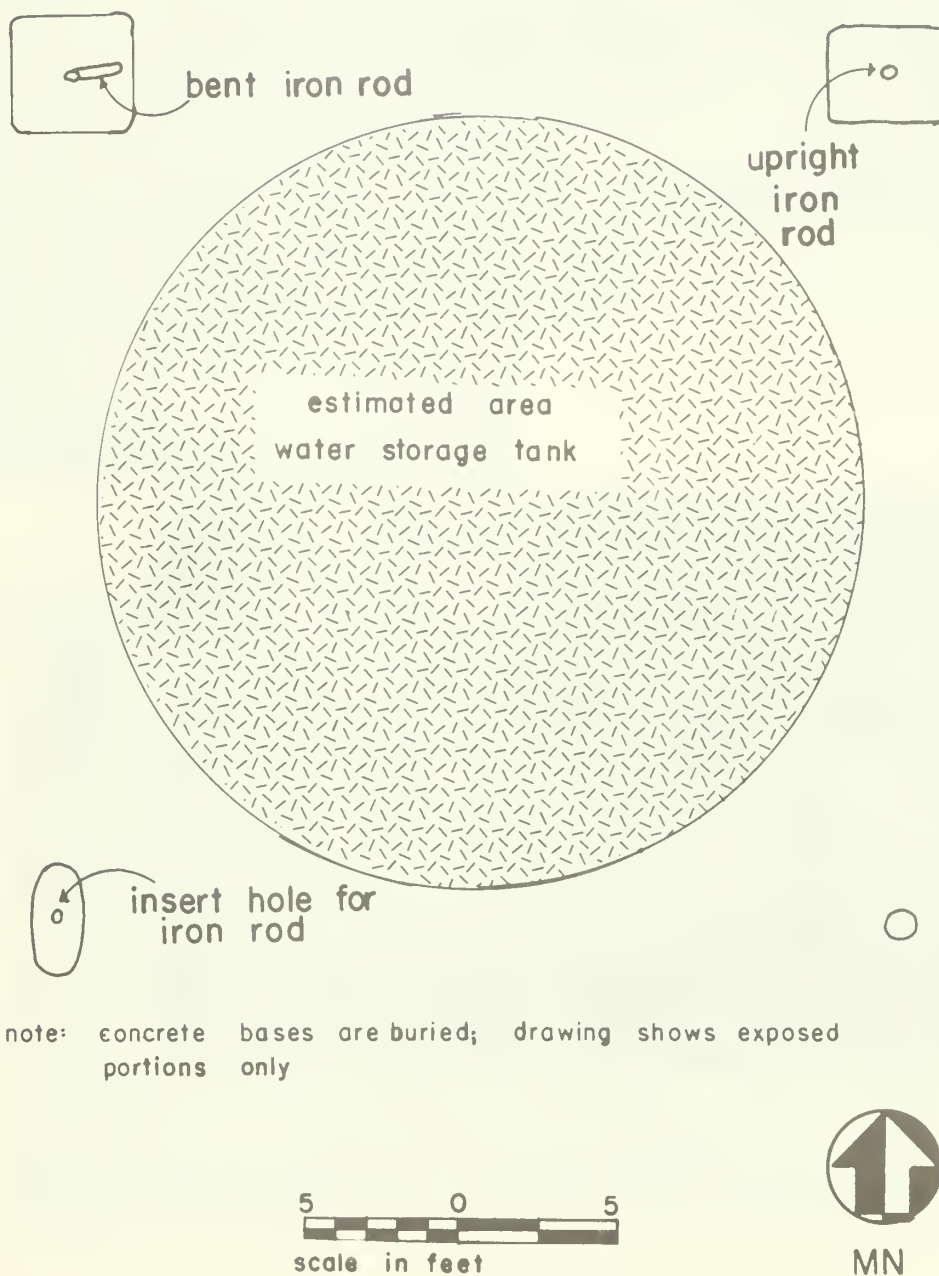
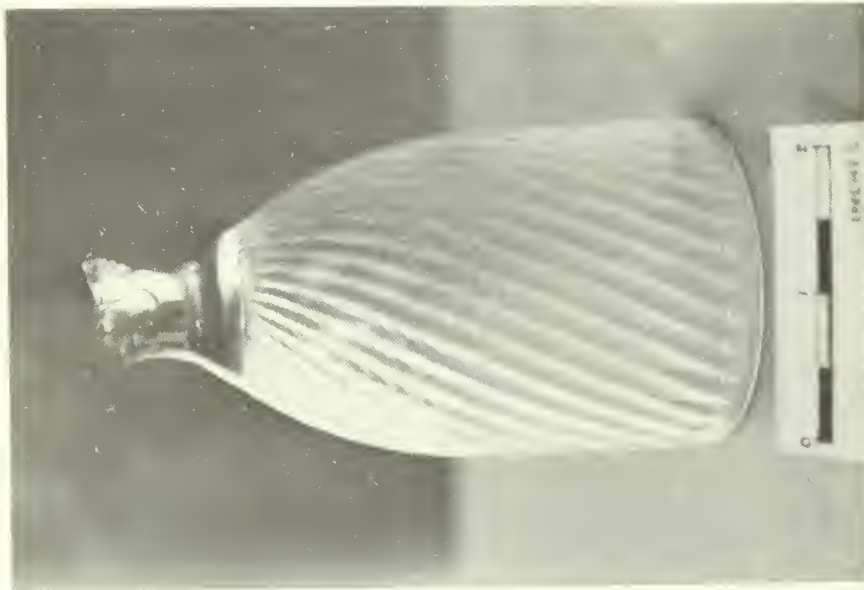


Figure 14: Feature 26/27, water tower base



Photograph 75: Goblet

Source: Acadia National Park



Photograph 76: Amethyst-colored milk bottle



Photograph 77: "1937" milk bottle



Photograph no. 78: Feature 25, concrete "curb"

Source: Acadia National Park

been associated with the ranger residence known to have occupied the immediate area in the mid-1900s. The feature may also have been part of the old pump house (photograph 78).

Battery parts, such as posts, terminals and wrapping, and wire mesh, brass and white metal wires, a large multi-strand wire around a copper core, and a great deal of seven strand copper wire were all recovered from Dump No. 4 (photographs 79 and 80). These remains would be expected in close proximity to The Field. However, objects from other parts of the base were discarded here as well. The dump contained hard whiteware plates and bowls (probably of Navy issue), a milk glass light fixture, carboy glass, a shovel, window glass, and coal. Several of the dumps contained large metal cans. The one-gallon round institutional-sized "tin cans" probably contained canned food, while the ca. 5-gallon square cans may have held oil or some other fluid (photographs 81 and 82 illustrate some of the whiteware found on the base).

Dumps No. 2 and 4 were located just outside the fence line of the original Navy station boundary. Most of the items in Dump No. 4 were burned, indicating that the Navy may have incinerated their garbage before depositing it in this area, or it may have been burned in place.

Another dumping ground located in a ravine south of Fishhouse Road was probably used during the Otter Cliffs Navy Station period. A few battery parts and some bottle glass found here may date from around that time. However, two medicine bottles recovered from this dump date from between 1885 and 1920, and it is almost certain that the dump was used primarily by the occupants of a house just to the east whose foundations (Feature 49) still exist. The house was standing during the Navy station period and probably was there for some years before.

Very little Navy period refuse was found away from these dumping areas. One exception was a whiteware plate fragment found in a test pit along the connecting road east of the parking area. The plate fragment



Photograph no. 79: Wiring, dump no. 4

Source: Acadia National Park



Photograph 80: Insulators. Top two rows-- knob insulators used on loop antenna wiring in "The Field." Bottom row--telephone line insulators

Source: Acadia National Park



Photograph 81: Undecorated whiteware

Source: Acadia National Park



Photograph 82: Whiteware

Source: Acadia National Park



Photograph 83: Whiteware with maker's mark, date

Source: Acadia National Park

featured a maker's mark, "THE BAILEY - WALKER/VITRIFIED CHINA/1927" inscribed inside and below the outline of an open book (photograph 83).

Since site plans were not available until late February, 1984, locations of several Naval structures shown on the maps could not be ground-truthed during the 1983 project. One of these was the "old garage", structure no. 7, present on an 1919 map. The 1921 map, figure 6, indicates that this structure was to be demolished. It may have been a temporary building; or part of the original Country Club outbuildings. In either case it had been removed by February of 1924. The "new" garage, built ca. 1920 and destroyed by the January 1923 fire, was not visible on the ground surface. Depth below surface of the feature 9 foundations and the associated undisturbed burned level would seem to indicate the foundations were part of the 1920s garage.

A pig sty and pen were built in the far southwest corner of the site between 1919 and 1921. No remnants of these were seen during the survey. Three small structures used for temporary paint and oil storage and as a boatswain's locker were just east of the pig sty, along the property line (Fig. 6). These were depicted for the first time on 1921 maps and had vanished by 1934.

Fabbri's cottage evolved over the years from a small, square building to an expanded "L" shaped officer's quarters by 1924. The name "marine barracks" does not appear on any of the available site plans, so it is possible that the cottage was remodeled and used to house the Marines after Fabbri's resignation as Commander of the station. No field survey or testing was done in the vicinity of the Fabbri cottage since prior to receipt of the site maps its exact location was unknown; historical accounts placed it somewhere outside the base entrance. It is possible that foundations and artifacts from the Radio Station period are extant in this area also.

No trace of the two "wireless masts" set on concrete pads was found during survey or testing, although tiedowns in the vicinity of Barracks B may have been associated with one of these structures. (A schematic drawing of these towers appears on a January, 1931 site map. U.S. Navy, 1931; Fig. 3).

A small structure was situated at the far eastern end of the connecting road (Figs. 6 and 7). It was known as the gate house; no trace of it remains today.

Naval site plans show a proliferation of different types of electrical wiring (both overhead and underground) built to service the radio equipment and various buildings. The maps show such wiring as "2-3 phase 220 volt; 3 phase 16000 volt, 60 cycle; and 110 volt power." Although the major increases in electrical lines, water, sewage, and heating conduit occurred between 1919 and 1924, additional improvements continued well into 1934.

Since intensive pedestrian survey detected artifacts and features near the utility line corridor, additional shovel tests were dug near the park boundary and just south of the Fish House Road (Fig. 2). Modern debris, including beer and soda bottles, green glass, asphalt, and spark plugs, were found on the surface and in the uppermost level of the tests. Disturbance from road building activities was evident in test profiles, and the few nondiagnostic artifacts found were not considered significant (Table 3).

The original development plans (Drawing no. 123/41045) were modified in line with test findings; the picnic areas were shifted westward to avoid structural remains (Fig. 4, Drawing no. 123/41045A).

P. Summary

The Fabbri site is a complex collection of structural and artifactual remains. From an archeological perspective, it was quite difficult to adequately define what occurred at particular areas of the site

due to the continual evolution of structures and communication systems over this 17-year period. Site maps for the years 1919, 1920, 1921, 1924, 1927, 1928, 1931 and 1934 illustrate this point well, as new buildings appear on the various maps. There were also changes in building names and shapes. Advances in radio technology at the base can almost be measured by the number and extent of these changes.

Artifact types and their distribution give evidence of the many human activities in this area. For example, most of the older ceramics and wrought nails were found at or near Features 13 and 33. The decorative attributes and types of these ceramics are consistent with household items in use during the early 19th century. The distribution of the shards fits a pattern where, typically, dishes broken in food preparation and/or dining were dumped behind or away from the house, with fragments dropped or swept out near doors and porches.

The dry-laid, uncut granite foundation and wells are typical of 19th century building practices. Granite in culverts along the Otter Cliffs Road is usually of two types-the older sections are typically coarse-grained, reddish granite, while the newer replacement blocks are fine-grained greyish granite. It could be argued that the upper strata of reddish granite, more easily obtainable, was quarried early on for building construction, with later quarrying activities producing more of the grey. A geologic map of the area shows a concentration of the pinkish (reddish) granite in the eastern portion of Mount Desert Island, so differential use of these two types at Fabbri may reflect only improved transportation facilities over the past 180 years. The finer-grained grey granite appears in Features 15-17, 41A, 41B, 42, and 7; the reddish granite in Features 13, 33, 45, and 47.

The high proportion of wiring and electrical equipment and apparatus is consistent with occupation and site use by the Navy (table 3). Concentrations of whiteware, bottle glass, shoe leather, and institutional size cans were found in the dump areas rather than spread around buildings. This demonstrates a carefully planned garbage disposal by the

Navy. On the other hand, items scattered throughout the site and not concentrated in dumps probably reflect construction/demolition stages when military tidiness was not so necessary. So much construction and change occurred here throughout the Navy's short occupation, that many of the construction related artifacts could date anywhere from 1919 to 1935 (table 3). The large amounts of coal and combustion by-products found in several separate areas probably reflects storage, use and disposal for the two large barracks, each of which probably had its own heating plant.

No testing was done on the memorial knoll, along the cliffside, or in The Field since these were outside the area of planned development. However, materials eroding from the cliffside and visible in dumps near The Field provides clues to quantities and types of items used on this base. Near the monument hand-painted and transfer-printed ceramics and large amounts of colored bottle glass are mixed with shell cartridges and electrical wiring. This indicates the varied uses of this portion of the site--first as a private summer home, then as a country club, and finally as a Naval facility.

Although the structures were razed, most of the subsurface structural elements remain intact. Part of the upper portion of feature 20 (Barracks B foundations) was broken off, probably during backfilling of the basement area shortly after the structure burned. Other foundations and underground structures (features 9, 23, 31) lie under a shallow layer of humic material, surrounded by an undisturbed layer of burned artifactual materials under the humus. This would indicate that the ground surface in portions of these areas has not been disturbed since the 1920s. The old foundation, feature 33, was disturbed, probably during the Radio Station period.

Q. Conclusions and Recommendations

The site is clearly significant for its role in World War I military defense, and for the technological advances in radio communications developed here by some of the United States' leading

electronics experts. For example, atmospheric noise (static) reduction hardware for high frequency radio signal reception was developed and tested at the Otter Cliffs station, along with the Hoxie Recorder and numerous other equally important technology. Placement, size, shape, materials, and associations of the structural remains of this communications landmark compliment historical data to give us a clearer picture of this important installation.

The site's integrity depends not so much upon standing structures, but upon the potential for yielding more data regarding early communications and our involvement in World War I. It should be noted that base operations were shrouded in secrecy for a number of years. Code books were bound in lead so they would sink promptly if tossed out into the water; radiomen were not allowed to "talk" but had always to use code (Hovenden, 1983). Few published materials dealing with the early years of Naval radio are available in collated form for the interested lay person or historian. With today's technology we forget how difficult the initial steps of radio communication were. Pressured by the urgency of war, the inexperienced radiomen utilized their Yankee ingenuity to find new and better ways to communicate across oceans rapidly and clearly, eliminating static and enemy jamming, thus building the technological framework upon which today's communications are based.

Recommendations deal with five aspects of cultural resource management at Fabbri:

1. Compliance with legal and policy mandates
2. Documentation of site cultural resources for park planning
3. Safety considerations
4. Site interpretation
5. Preservation of cultural resources and site archeological potential, particularly as the resources apply to technological advances in radio.

First, if site development proceeds as proposed, completion of cultural and natural resources compliance procedures is necessary prior to approval of design and construction documents. Monitoring of

construction activities is necessary due to the great potential for finding subsurface cultural resources. Stop-work clauses should be inserted into contractor's specifications.

Design proposals for the site should be based upon the cultural resources base maps, with avoidance and protection of extant structural remains and potentially sensitive zones.

A number of assumptions were made in this report regarding the size, function, affiliation, and period of use of Features 33 and 13 (the dry-laid foundation and adjacent stone-lined well). Further archeological work should be programmed to test these assumptions and to more adequately document these features since they appear to contain 18th, 19th, and 20th century components. Additional work should also be done at the wood- and stone-lined depressed areas (Features 2 and 3) near the memorial to determine their function and affiliation. The remaining brick-lined manholes should also be documented before silting and/or road construction activities fill or damage them. The Radio Compass Station and Transmitting Station sites (on other parts of Mt. Desert Island) should be documented for the park's inventory of cultural resources.

The structural and artifactual remains at Feature 49 and the large foundation just inside the Park boundary should be carefully mapped, photographed, described, significance evaluated, and appropriate site forms prepared. Other sites outside the project area--such as the Fabbri cottage area--should also be surveyed and evaluated. Park planning, especially the cultural resources management plan, needs to consider management of Fabbri as a cultural area.

Slumped areas, wells and dumps pose a safety hazard for the Park. These should be filled with clean sand before sodding over. Park records should note date, location, type and amount of fill should future archeological work be necessary. This will eliminate most of the littering and safety hazard problems while preserving valuable resources. Filling will also help prevent mixing and disturbance of strata.

The Fabbri Memorial site can add an entirely new dimension to interpretation at Acadia. Understanding the Park's human use and land modification is an integral part of the entire interpretive story--which already includes such historic places as the Jordan Pond House, the Carroll farm, and the Rockefeller road system. Interpretive displays incorporating historic photographs, archeological and site data, placed in close juxtaposition to some of the foundations, could present the story clearly and effectively. Some of the radio equipment from the Otter Cliffs station is purportedly still extant and could possibly be donated to the park for interpretive purposes (Shafer 1983).

We have many areas in the NPS system that illustrate and commemorate the Revolutionary and Civil Wars, but very few representative examples of World War I activities, especially communication technology. Acadia's Fabbri area is a unique and eloquent tribute to the technology and military defenses of the period, and to the dedicated men who served here.

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Appendix 1 - Tables

Table 1

Control	T1-1	T1-3	T1-4	T1-5	T1-7	T1-9	T1-11	T1-1	T1-3	T1-5	T1-7	T1-9	T1-11	T1-13	T1-15
Test	sod over brown sandy loam	sod over med. brown loam	sod over dark brown sandy loam	brown sand	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam	humic dark brown sandy loam
dark	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown	gravelly dark brown
humic	loam	loam	loam	loam	loam	loam	loam	loam	loam	loam	loam	loam	loam	loam	loam
7.5 YR3/2															
.5'	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil
gravelly red-brown sandy soil															
7.5 YR6/6															
with lens of															
volc. tuff															
1.0' 10 YR5/2	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil	gravelly tan sandy soil
1.5'	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal	compacted cobbly gravelly reddish-tan loam, sandy soils charcoal
2.0'	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils	gravelly reddish-tan sandy soils
2.5'															
3.0'															
3.5'															
artifacts															

Table 1, con't.

	T7-1	T7-3	T7-5	T7-7	T7-9	T7-11	T7-13	T9-1	T9-3	T9-5	T9-7	T9-9	T9-11	T9-13	Ill-1	Ill-3	Ill-5
	dark brown loam, brown sandy loam, with clam shells of clam	humus dark brown loam, with lens shell	humus brown loam with char coal, podent burrow and seed cache	compact grey clay	humus and moss over mottled wet grey-tan-brown clays with some gravel	humus mottled grey-tan-brown clays with gravel	humus sandy loam, brown charcoal	sod over humic dark brown loam	dark brown loam	gravelly grey-tan sandy loam with high clay content	moss compact grey-green clay	brown loam	brown loam	dark brown loam, silt loam	humic dark brown loam	humic dark brown loam	compact mottled grey-brown clay
5'								grey-brown cobbles and gravel	cobbly brown silt loam	imported gravel mottled grey clay with patches of sand		grey-green clay with red-brown sandy mottles	compact grey-green clay	grey-white volcanic tuff	cobbly red-brown silt	dark brown sandy silt	dark brown sandy silt
1.0'								stony coarse sandy soil				grey-white volcanic tuff with volcanic tuff with sand mottles	light grey-green clay with red-brown sandy mottles	loose red-brown sandy soil		light brown sand with silt matrix	
1.5'									grey/white volcanic tuff			grey-green volcanic clay with brown sand mottles	coarse silty tan clay with red-brown mottles	compact coarse sandy soil		red-brown silty clay	
2.0'												damp tan-red coarse sand					
2.5'																	
3.0'																	
3.5'																	

* = artifacts

o = concrete foundation

X = electrical conduit

Table 1, con't.

★ = artifacts

Table 1, con't.

Table 1, cont.																	
	T14-11	T14-13	T15-1	T15-3	T15-5	T15-6	T15-7	T15-8	T15-9	T15-10A	T15-11	T15-13	T16-1	T16-3	T16-5	T16-7	T16-9
	stony brown sandy soil	stony brown loam	humus and coal	grey-green clay	humus	compact silty clay	humus + brown and reddish coarse sand	gravelly compact brown silt with lenses of grey clay compact brown sandy soil	humus compact brown silt (road bed?)	stony mottled brown silt (road bed?)	humic brown loam	humic brown loam	compact grey-brown clay	dark brown humic loam	dark brown humus grading to brown silt/ sand matrix	dark brown humic loam	dark brown grey loamy clay
1.5'			stony gravel fill with concrete	stony gravel clay	compact grey-green clay			lens of dark silt old top soil (?)			stony brown sandy loam	stony brown sandy loam	gravelly brown sandy soil	mottled loamy tan- grey clay		dark brown sandy soil	

Table 1, con't.

	T16-11	T16-13	T17-1	T17-3	T17-5	T17-7	T17-9	T17-11	T17-13	T19-11	T20-13
	dark grey brown wet clay	dark brown humus	gravelly dark brown silt; some imported gravel	gravelly dark brown silt; some imported gravel	gravelly brown sandy soil charcoal	grey clay *	humic brown sandy loam	stony humic soil (roots)	humic brown silty loam	cobbly grey silt concrete *	humic dark brown loam gravel
5'			light grey clay	gravelly dark grey silt; some imported gravel			stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	concrete *	
1.0'			grading to lighter grey	gravelly dark brown silt; some imported gravel			stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	concrete *	
1.5'			grading to lighter grey	gravelly dark brown silt; some imported gravel			stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	concrete *	
2.0'			grading to lighter grey	gravelly dark brown silt; some imported gravel			stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	concrete *	
2.5'			grading to lighter grey	gravelly dark brown silt; some imported gravel			stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	concrete *	
3.0'			grading to lighter grey	gravelly dark brown silt; some imported gravel			stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	concrete *	
3.5'			grading to lighter grey	gravelly dark brown silt; some imported gravel			stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	stony tan sandy silt and grey sandy clay	concrete *	

PROFILES OF SHOVEL TESTS

PROFILES OF SHOVEL TESTS

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* - artifacts

Table 1, con't.

* = artifacts

	T12-1S	T12-3S	T12-5S	T12-7S	T12-8S	T13-1S	T14-2S	T15-2S	T16-2S	T17-2S	T17-2AS	T18-2S	
	humic, dark brown topsoil	humus, dark brown topsoil	humus, dark brown silt, topsoil, grey sand	humus, dark brown silt, grey sand	humus, dark brown silt, humus	dark brown humic soil	compact dark brown humic soil	compact dark brown humic soil	brown silt, clay lenses, concrete mix	brown silt, clay lenses, concrete mix	brown silt, clay lenses, concrete mix	brown silt, clay lenses, concrete mix	
.5'		grey-white sandy volcanic tuff		grey-white volcanic tuff	grey sand		compact red silt	mottled dark red sand					
	cobbly, gravelly red-brown sandy soil	cobbly, light grey volcanic tuff sandy soil	light grey volcanic tuff sandy soil	red-brown sandy soil	red sandy silt	cobbly, gravelly red-brown silt						cobbly compact red-brown silt	
1.0'		red-brown sandy soil with dark silt matrix	red-brown sandy soil with dark silt matrix	red-brown sandy soil with dark silt matrix					dark red silt, grey-white silt, grey-white volcanic tuff, canic tuff, lens				
1.5'												red silt, grey-white volcanic tuff lens	
2.0'													
2.5'													
3.0'													
3.5'													
* = artifacts													
0 = concrete													

Table 1, con't.

Factors

TABLE 2

Soil Texture (from United States Department of Agriculture 1961: 87-88).

1. Sandy Soil. Sandy soil is loose and single grained. The individual grains can be seen readily or felt. Squeezed in the hand when dry, it will fall apart when pressure is released. Squeezed when moist, it will form a cast, but will crumble when touched.

2. Sandy Loam Soil. Sandy loam soil contains much sand, but has enough silt and clay to make it somewhat coherent. Individual sand grains can be easily seen and felt. Squeezed when dry, it will form a cast which will readily fall apart; but if squeezed when moist, a cast can be formed which will bear careful handling without breaking.

3. Loam Soil. Loam soil is about an equal mixture of the sands and silt with the clay content being between 7 and 27 percent. A loam is mellow with a somewhat sandy feel, yet fairly smooth and slightly plastic. Squeezed when moist, it will form a cast which can be handled without breaking.

4. Silt Loam Soil. Silt loam soil, when dry, may appear cloddy, but lumps are readily broken, and when pulverized, it feels soft and floury. When wet, the soil readily runs together. Either dry or moist, it will form casts which can be handled freely without breaking, but when moistened and extruded between the thumb and fingers, it will not form a ribbon, but will give a broken appearance.

5. Clay Loam Soil. Clay loam soil is fine-textured soil which usually breaks into clods or lumps that are hard when dry. When moist soil is extruded between thumb and fingers, it will form a thin "ribbon" which will break readily, barely sustaining its own weight. The moist soil is plastic and will form a cast that will bear much handling. When kneaded in the hand, it does not crumble readily, but tends to work into a heavy, compact mass.

6. Clay Soil. Clay soil is a fine-textured soil that usually forms very hard lumps or clods when dry and is plastic and sticky when wet. When the moist soil is ribboned out between the thumb and fingers, it will form a long flexible strip. A clay soil leaves a "slick" surface on the thumb and fingers when rubbed together and tends to hold the thumb and fingers together due to the stickiness of the clay.

Names Used for Coarse Fragments in Soils

1. Gravelly - 2mm - 3 inch diameter
2. Cobbly - 3-10 inch diameter
3. Stony - more than 10 inch diameter

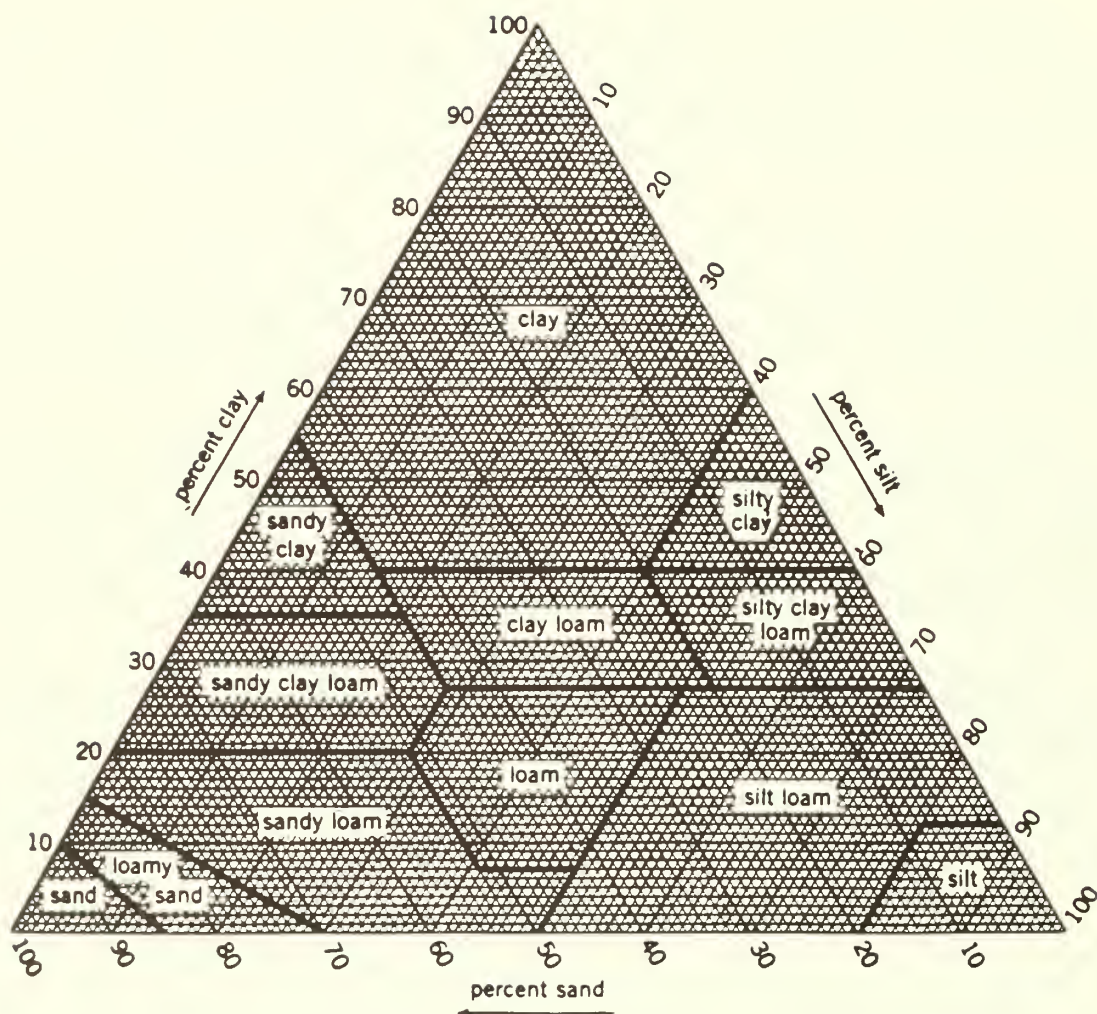


Figure 8 for Table 2

Source: U.S.D.A. Soil Survey Manual, 1951

Table 3

Table 3. Artifacts

	T1-1		T1-3		T3-1		T3-5		T3-9		T3-11		T5-1		T5-3		T5-5		T5-9		T5-13	
	L-1	L-2	L-3	L-5	L-1	L-6	L-1	L-3	L-2	L-2	L-3	L-1	L-2	L-1	L-3	L-1	L-3	L-1	L-3	L-2	surf	L-1
<u>CERAMICS AND GLASS</u> Redware lead glaze unglazed other Creamware plain Pearlware plain edge decorated hand painted burned other Creamware/Pearlware plain	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<u>Hard Whiteware</u> plain transfer print hand painted molded Pearlware/Hard Whiteware transfer print hand painted Other Earthenware burned spalls	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<u>Semi-Porcelain</u> plain Porcelain plain hand painted burned Stoneware brown salt glaze white salt glaze burned Other Ceramics kaolin pipe bowl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<u>Curved Bottle Glass</u> clear black brown milk amethyst aqua identifiable bottles/jars molten glass other	-	1	-	-	-	-	-	1	1	-	-	-	-	1	-	-	1	-	-	-	-	1
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<u>UTENSILS</u> <u>ARCHITECTURAL</u> <u>Window Glass</u> clear molten Nails wrought cut wire undifferentiated possible screws and bolts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Table 3: Artifacts (Con't.)

[illegible]

	T7-1		T7-3		T9-1v		T9-3		T9-5		T9-5B		T9-5v		T9-11		T11-1		T11-3		T11-5		T13-1		T13-3		T13-5	
	L-2	L-1	L-2	surf	L-1	L-2	L-1	L-2	L-1	L-2	L-1	surf	L-1	L-2	L-1	L-2	L-1	L-2	L-1	L-2	L-1	L-2	L-1	L-2	L-1	L-2	L-1	L-2
CONSTRUCTION MATERIALS																												
brick	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	
concrete/mortar	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	
*asbestos/fibreboard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
sewer pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
tarpaper roofing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HARDWARE, TOOLS AND ELECTRICAL																												
*high voltage insulators and fuses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*low voltage insulators and fuses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*electrical conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*battery parts	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
*electrical wire	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*electrical appliances and fixtures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*wire mesh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*copper rods/tubes	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*lead	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
miscellaneous shaped iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ferrous nodules	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*tools and box	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
car and bicycle parts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ROAD CONSTRUCTION																												
paving material	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
imported crushed gravel	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
UTILITIES																												
coal/coal combustion by-products	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	X	-	X	X	X	
FAUNAL/FLORAL																												
Bone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
burned	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Shell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
General	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
clam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wood	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
altered/milled	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
charcoal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
charred wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
INORGANICS																												
rock samples	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ferrous oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
possible fire-cracked rock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MISCELLANEOUS																												
foil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
rubber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
personal clothing items	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	1	X	X	5	2	15	14	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24	2	1	2	1	1	

(x) = present
 (*) = probably associated with radio station activities
 (V) = vicinity

[illegible]

	T14-1		T14-3				T14-5				T14-7		T14-9		T15-1		T15-3		T15-5		T15-7		T15-9		T15-11		T15-13V		
	L-1	L-2	L-3	L-2	L-3	L-4	L-2	L-3	L-4	L-2	L-3	L-1	L-2	L-2	L-1	L-2	L-3	L-4	L-3	L-1	L-2	L-2	L-2	L-2	L-2	L-2	L-2	L-2	surf
CONSTRUCTION MATERIALS																													
brick	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
concrete/mortar	3	-	1	2	-	1	-	-	-	-	-	1	-	-	-	1	1	6	-	-	-	-	-	-	-	-	-	-	-
*asbestos/fibreboard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sewer pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tarpaper roofing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HARDWARE, TOOLS AND ELECTRICAL																													
*high voltage insulators and fuses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*low voltage insulators and fuses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*electrical conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*battery parts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*electrical wire	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*electrical appliances and fixtures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*wire mesh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*copper rods/tubes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*lead	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
miscellaneous shaped iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ferrous nodules	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*tools and box	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
car and bicycle parts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROAD CONSTRUCTION																													
paving material	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
imported crushed gravel	X	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UTILITIES																													
coal/coal combustion by-products	X	X	X	X	X	X	-	-	X	-	-	X	-	-	X	-	X	X	-	-	X	-	-	-	-	-	-	-	-
FAUNAL/FLORAL																													
Bone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
burned	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
clam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
altered/milled	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
charcoal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
charred wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INORGANICS																													
rock samples	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ferrous oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
possible fire-cracked rock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MISCELLANEOUS																													
foil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
rubber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
personal clothing items	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	10	3	4	2	40	7	10	8	42	6	2	1	1	1	7	X	1	20	7	2	2	1							

(x) = present

(x) = present
 (*) = Probably associated with radio station activities
 (V) = vicinity

[illegible]

Table 3 Artifacts (Con't.)

	T4-75		T4-35		T4-75		T4-85		T6-25		T6-55		T6-75		T7-45		T8-35		T8-55		T8-75		T8-85		T8-85V	
	L-1	L-2	L-1	L-2	L-1/3	L-1	surf	L-1	L-1	L-3	L-1	L-1	L-1	L-1	L-2	L-1	L-2	L-3	L-1	L-2	L-1/2	L-2	L-2	L-2	surf	surf
<u>CERAMICS AND GLASS</u>																										
Redware																										
lead glaze																										
unglazed																										
other																										
Creamware																										
plain																										
Pearlware																										
plain																										
edge decorated																										
hand painted																										
burned																										
other																										
Creamware/Pearlware																										
plain																										
<u>Hard Whiteware</u>																										
plain																										
transfer print																										
hand painted																										
molded																										
Pearlware/Hard Whiteware																										
transfer print																										
hand painted																										
Other Earthenware																										
burned																										
spalls																										
<u>Semi-Porcelain</u>																										
plain																										
porcelain																										
plain																										
hand painted																										
burned																										
Stoneware																										
brown salt glaze																										
white salt glaze																										
burned																										
Other Ceramics																										
kaolin pipe bowl																										
<u>Curved Bottle Glass</u>																										
clear																										
black																										
brown																										
milk																										
amethyst																										
aqua																										
identifiable bottles/jars																										
molten glass																										
other																										
<u>UTENSILS</u>																										
<u>ARCHITECTURAL</u>																										
<u>Window Glass</u>																										
clear																										
molten																										
Nails																										
wrought																										
cut																										
wire																										
undifferentiated																										
possible																										
screws and bolts																										

	T9-4S										
	L-1	L-1/2	L-2	L-3	L-1	L-1	L-1	L-1	L-1	surf	
CERAMICS AND GLASS											T17-2S
											T13-1S
											T12-6SV
											T11-4S
											T11-1S
											T10-8S
											T10-3S
											T10-1S
											T9-5-2S
Redware											
lead glaze											
unglazed											
other											
Creamware											
plain											1
Pearlware											
plain											1
edge decorated											2
hand painted											
burned											
other											
Creamware/Pearlware											
plain											
Hard Whiteware											
plain											
transfer print											
hand painted											
molded											
Pearlware/Hard Whiteware											
transfer print											
hand painted											
Other Earthenware											
burned											
spalls											
Semi-Porcelain										3	
											1
Porcelain											
plain											
hand painted											
burned											
Stoneware											
brown salt glaze											
white salt glaze											
burned											
Other Ceramics											
kaolin pipe bowl											
Curved Bottle Glass											
clear											
black											
brown											
milk											
amethyst											
aqua											
identifiable bottles/jars											
molten glass											
other											
UTENSILS											
ARCHITECTURAL											
Window Glass											
clear											
molten											
Nails											
wrought											
cut											
wire											
undifferentiated											
possible											
screws and bolts											

	T9-4S										
	L-1	L-1/2	L-2	L-3	L-1	L-1	L-1	L-1	L-1	L-1	L-1
CONSTRUCTION MATERIALS											
brick	-	-	-	-	3	-	-	-	-	-	-
concrete/mortar	1	-	-	-	4	-	-	-	6	-	-
*asbestos/fibreboard	-	-	-	-	-	-	-	-	-	-	-
sewer pipe	-	-	-	-	-	-	-	-	-	-	-
tarpaper roofing	-	-	-	-	-	1	-	-	-	-	-
HARDWARE, TOOLS AND ELECTRICAL											
*high voltage insulators and fuses	-	-	-	-	-	-	-	-	-	-	-
*low voltage insulators and fuses	-	-	-	-	-	-	-	-	-	-	-
*electrical conduit	-	-	-	-	-	-	-	-	-	-	-
*battery parts	-	-	-	-	-	-	-	-	-	-	-
*electrical wire	-	-	-	-	-	-	-	-	-	-	-
*electrical appliances and fixtures	-	-	-	-	-	-	-	-	-	-	-
*wire mesh	-	-	-	-	-	-	-	-	-	-	-
*copper rods/tubes	-	-	-	-	-	-	-	-	-	-	-
*lead	-	-	-	-	-	-	-	-	-	-	-
miscellaneous shaped iron	-	-	-	-	-	-	-	-	-	-	-
ferrous nodules	-	-	3	1	2	-	-	-	-	-	-
*tools and box	-	-	-	-	-	-	-	-	-	-	-
car and bicycle parts	-	-	-	-	-	-	-	-	-	-	-
ROAD CONSTRUCTION											
paving material	-	-	-	-	-	-	-	-	-	-	-
imported crushed gravel	-	-	-	-	X	-	-	-	-	-	-
UTILITIES											
coal/coal combustion by-products	X	X	X	-	X	-	-	-	-	-	-
FAUNAL/FLORAL											
Bone	-	-	-	-	-	-	-	-	-	-	-
burned	-	-	-	-	-	-	-	-	-	-	-
Shell	-	-	-	-	-	-	-	-	-	-	-
general	X	-	-	-	-	-	-	-	-	-	-
clam	-	-	-	-	-	-	-	-	-	-	-
Wood	-	-	-	-	-	-	-	-	-	-	-
altered/milled	-	-	-	-	-	-	-	-	-	-	-
charcoal	-	-	-	-	-	-	-	-	-	-	-
charred wood	-	-	-	-	-	-	-	-	-	-	-
INORGANICS											
rock samples	-	-	-	-	-	-	-	-	2	-	-
ferrous oxide	-	-	-	-	-	-	-	-	-	-	-
possible fire-cracked rock	-	-	-	-	-	-	-	-	-	-	-
MISCELLANEOUS											
foil	-	-	-	-	-	-	-	-	-	-	-
rubber	-	-	-	-	-	-	-	-	-	-	-
personal clothing items	-	-	-	-	-	-	-	-	-	-	-
Total	1	2	4	2	23	2	1	1	6	1	2

(x) = present

(*) = probably associated with radio station activities

(V) = vicinity

	TW4	TW6	TW7	UT1	UT2	UT3	UT4	UT5	FEA 13	FEA 20	FEA 21	FEA 23V	FEA 33	FEA 33V	FEA 35V	FEA 45V	North Dump	Dump 1	Dump 2	Dump 3
<u>CERAMICS AND GLASS</u>																				
<u>Redware</u>																				
lead glaze																				
unglazed																				
other	1																			
<u>Creamware</u>																				
plain	1																			
<u>Pearlware</u>																				
plain																				
edge decorated																				
hand painted																				
burned																				
other																				
<u>Creamware/Pearlware</u>																				
plain																				
<u>Hard Whiteware</u>																				
plain																				
transfer print																				
hand painted																				
molded																				
<u>Pearlware/Hard Whiteware</u>																				
transfer print																				
hand painted																				
<u>Other Earthenware</u>																				
burned																				
spalls									6					10					2	
<u>Semi-Porcelain</u>																				
plain																				
<u>Porcelain</u>																				
plain																				
hand painted																				
burned																				
<u>Stoneware</u>																				
brown salt glaze																				
white salt glaze																				
burned		1																		
<u>Other Ceramics</u>																				
kaolin pipe bowl																				
<u>Curved Bottle Glass</u>																				
clear									10	1	3		1				5	2	1	
black																				
brown			1					10												
milk																				
amethyst									1											
aqua																				
identifiable bottles/jars			13					2									2	1		
molten glass								14									12	1	9	
other		1						3										1		
<u>UTENSILS</u>									4								1			
<u>ARCHITECTURAL</u>																				
<u>Window Glass</u>																				
clear																				
molten																				
<u>Nails</u>																				
wrought																				
cut																				
wire																				
undifferentiated																				
possible																				
screws and bolts																				

	TW4	TW6	TW7	UT1	UT2	UT3	UT4	UT5	FEA 13	FEA 20	FEA 21	FEA 23V	FEA 33	FEA 33V	FEA 35V	FEA 45V	North Dump	Dump 1	Dump 2	Dump 3
<u>CONSTRUCTION MATERIALS</u>																				
brick	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-
concrete/mortar	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
*asbestos/fibreboard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sewer pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tarpaper roofing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>HARDWARE, TOOLS AND ELECTRICAL</u>																				
*high voltage insulators and fuses	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
*low voltage insulators and fuses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*electrical conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*battery parts	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	-	18	-
*electrical wire	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
*electrical appliances and fixtures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*wire mesh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*copper rods/tubes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*lead	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
miscellaneous shaped iron	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-
ferrous nodules	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-
*tools and box	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
car and bicycle parts	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<u>ROAD CONSTRUCTION</u>																				
paving material	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
imported crushed gravel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>UTILITIES</u>																				
coal/coal combustion by-products	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
<u>FAUNAL/FLORAL</u>																				
Bone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
burned	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
general	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
clam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
altered/milled	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
charcoal	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
charred wood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>INORGANICS</u>																				
rock samples	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ferrous oxide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
possible fire-cracked rock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>MISCELLANEOUS</u>																				
foil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-
rubber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
personal clothing items	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	4	-	-
Total	2	2	15	2	4	3	3	1	56	3	424	1	3	12	1	1	22	9	20	18

(x) = present

(*) = Probably associated with radio station activities

(V) = vicinity

	Dump 4	Cliffside Barracks B	"Hoxie" Receiving Shack	All Units
				<u>Total</u>
<u>CERAMICS AND GLASS</u>				
<u>Redware</u>				
lead glass	-	-	-	- 11
unglazed	-	-	-	- 1
other	-	-	-	- 3
<u>Creamware</u>				
plain	-	-	-	- 16
<u>Pearlware</u>				
plain	-	-	-	- 16
edge decorated	-	-	-	- 13
hand painted	-	-	-	- 8
burned	-	-	-	- 6
other	-	-	-	- 3
<u>Creamware/Pearlware</u>				
plain	-	-	-	- 1
<u>Hard Whiteware</u>				
plain	21	5	-	- 34
transfer print	-	5	-	- 5
hand painted	-	7	-	- 9
molded	-	-	-	- 1
<u>Pearlware/Hard Whiteware</u>				
transfer print	-	-	-	- 1
hand painted	-	-	-	- 11
<u>Other Earthenware</u>				
burned	-	-	-	- 10
spalls	-	-	-	- 11
<u>Semi-Porcelain</u>				
plain	-	1	-	- 5
<u>Porcelain</u>				
plain	-	1	-	- 4
hand painted	-	-	-	- 2
burned	-	-	-	- 3
<u>Stoneware</u>				
brown salt glaze	-	-	-	- 1
white salt glaze	-	-	-	- 1
burned	-	-	-	- 1
<u>Other Ceramics</u>				
kaolin pipe bowl	-	-	-	- 1
<u>Curved Bottle Glass</u>				
clear	5	-	-	- 78
black	-	-	-	- 1
brown	-	-	-	- 14
milk	5	-	-	- 8
amethyst	-	-	-	- 2
aqua	1	-	-	- 14
identifiable bottles/jars	-	-	-	- 50
molten glass	2	-	-	- 15
other	-	-	-	- 9
<u>UTENSILS</u>				
-	-	-	-	- 5
<u>ARCHITECTURAL</u>				
<u>Window Glass</u>				
clear	-	-	-	- 42
molten	-	-	-	- 394
<u>Nails</u>				
wrought	-	-	-	- 2
cut	-	-	-	- 14
wire	-	-	-	- 90
undifferentiated	-	-	-	- 47
possible	-	-	-	- 10
screws and bolts	-	-	-	- 2

	Dump	Cliffside	Barracks B	"Hoxie"	Receiving Shack	All Units
						Total
<u>CONSTRUCTION MATERIALS</u>						
brick	-	-	-	-	-	22
concrete/mortar	-	-	-	-	-	47
*asbestos/fibreboard	-	-	-	-	-	2
sewer pipe	-	-	-	-	-	1
tarpaper roofing	-	-	-	-	-	6
<u>HARDWARE, TOOLS AND ELECTRICAL</u>						
*high voltage insulators and fuses	-	-	-	-	-	4
*low voltage insulators and fuses	2	-	-	1	-	8
*electrical conduit	-	-	-	-	-	2
*battery parts	5	-	-	-	-	25
*electrical wire	3	-	-	-	1	8
*electrical appliances and fixtures	-	-	-	-	-	3
*wire mesh	1	-	-	-	-	1
*copper rods/tubes	2	-	-	-	-	4
*lead	-	-	-	-	-	3
miscellaneous shaped iron	5	-	-	-	-	45
ferrous nodules	-	-	-	-	-	73
*tools and box	-	-	-	-	-	2
car and bicycle parts	-	-	-	1	-	3
<u>ROAD CONSTRUCTION</u>						
paving material	-	-	-	-	-	8
imported crushed gravel	-	-	-	-	-	X
<u>UTILITIES</u>						
coal/coal combustion by-products	-	-	-	-	-	X
<u>FAUNAL/FLORAL</u>						
Bone	-	-	-	-	-	2
burned	-	-	-	-	-	X
Shell	-	-	-	-	-	X
general	-	-	-	-	-	X
clam	-	-	-	-	-	X
Wood	-	-	-	-	-	21
altered/milled	-	-	-	-	-	26
charcoal	-	-	-	-	-	X
charred wood	-	-	-	-	-	X
<u>INORGANICS</u>						
rock samples	-	-	-	-	-	6
ferrous oxide	-	-	-	-	-	2
possible fire-cracked rock	-	-	-	-	-	2
<u>MISCELLANEOUS</u>						
foil	-	-	-	-	-	8
rubber	-	-	-	-	-	4
personal clothing items	1	-	-	-	-	6
<u>Total</u>	53	19	1	2	1	1319

(x) = present

(*) = probably associated with radio station activities

(V) = vicinity

Appendix 2 - National Register of Historic Places form, Fabbri Memorial,
Acadia National Park

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICENATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM

FOR FEDERAL PROPERTIES

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SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS**1** NAME

HISTORIC

Otter Cliffs Radio Station *S. 12*

AND/OR COMMON

Fabbri Memorial

2 LOCATION

STREET & NUMBER

On Ocean Drive and Otter Cliff Road, near Otter Point

___ NOT FOR PUBLICATION

CITY, TOWN

___ CONGRESSIONAL DISTRICT

Mt. Desert Island, Acadia N.P.

___ VICINITY OF

Congressional District 2

STATE

CODE

COUNTY

CODE

Maine

23

Hancock County 009

3 CLASSIFICATION

CATEGORY

OWNERSHIP

STATUS

PRESENT USE

___ DISTRICT

☒ PUBLIC

___ OCCUPIED

___ AGRICULTURE

___ MUSEUM

___ BUILDING(S)

___ PRIVATE

☒ UNOCCUPIED

___ COMMERCIAL

☒ PARK

___ STRUCTURE

___ BOTH

___ WORK IN PROGRESS

___ EDUCATIONAL

___ PRIVATE RESIDENCE

☒ SITE

PUBLIC ACQUISITION

ACCESSIBLE

___ ENTERTAINMENT

___ RELIGIOUS

___ OBJECT

___ IN PROCESS

___ YES RESTRICTED

___ GOVERNMENT

___ SCIENTIFIC

___ BEING CONSIDERED

___ YES UNRESTRICTED

___ INDUSTRIAL

___ TRANSPORTATION

___ NO

___ MILITARY

___ OTHER

4 AGENCYREGIONAL HEADQUARTERS *(if applicable)*

National Park Service, North Atlantic Region

STREET & NUMBER

15 State Street

CITY, TOWN

STATE

Boston, Massachusetts

___ VICINITY OF

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE

REGISTRY OF DEEDS, ETC.

Hancock County Courthouse

STREET & NUMBER

60 State Street

CITY, TOWN

STATE

Ellsworth, Maine

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

DATE

___ FEDERAL ___ STATE ___ COUNTY ___ LOCAL

DEPOSITORY FOR
SURVEY RECORDS

CITY, TOWN

STATE

DESCRIPTION

CONDITION

☐ EXCELLENT
☒ GOOD
☐ FAIR

☐ DETERIORATED
☐ RUINS
☐ UNEXPOSED

CHECK ONE

☐ UNALTERED
☒ ALTERED

CHECK ONE

☒ ORIGINAL SITE
☐ MOVED DATE _____

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The site of the former Otter Cliffs Radio Station is a remote peninsula in the southeast corner of Mt. Desert Island. It overlooks Otter Cove to the west. The topography is flat to lightly rolling. Vegetation is second or third growth forest. There is a meadow approximately three to four acres in size south of the main east-west site access road. On the west edge of the site is the Fabbri Memorial and an overlook of Otter Cove. Otter Cliff Road, Ocean Drive, Fishhouse Road, and the main site access road crisscross the site.

Historically the site contained 13.08 acres of land. At various times, however, there were facilities outside these boundaries such as a lighthouse (constructed in 1917 on the southeastern extremity of Otter Point) and a remote control transmission station at Seawall, ten miles west (ca. 1919). Occasionally, experiments were too large to be contained on the immediate station grounds. However, those 13.08 acres contain the remains of all radio station structures and encompass the full range of station activities.

Although the site was dismantled shortly after it was vacated (1934), the foundations of all major structures and most minor permanent structures can be identified. The original site plan has only been disrupted on the west side where construction of Ocean Drive, the Fabbri Memorial, and the overlook has destroyed a portion of the Administration and Operations building and where erosion of the cliff has partially overtaken the former guardhouse foundation. The main site access road has been extended from Otter Cliff road west to the Memorial. Major structures were the Administration Building, the Traffic (or Operations) Building, barracks, dam, cottage, and guardhouse. Minor structures include the remains of the water tower, well site, garage, cesspools, manholes, receiving shacks, Hoxie Recorder building, two experimental buildings, and the pier.

When the Otter Cliffs Radio Station was constructed, the site was cleared of most trees. Only a few trees over 15 inches in diameter still exist within the historic boundaries. Since its dismantling the site has reverted to a more natural appearance. Exceptions to this are the immediate environs of the temporary comfort stations, Ocean Drive, the Fabbri Memorial, and the overlook. A wet, marshy area across Ocean Drive from the Memorial and north of the main site access road (east-west) marks the location of the former dam and "Radio Pond." As a result of vegetation regrowth and the breaching of the former dam, the site does not resemble its historic appearance.

The Administration building of the Radio Station was originally Otter's Nest, the summer "cottage" of Aulick Palmer, a United States Marshall from Washington, D.C. It remained a private residence from its construction in 1884 until 1910 when the Palmers turned it into the Country Club of Mt. Desert. In 1917, Otter's Nest was purchased by Allesandro Fabbri for a receiving station. All other structures of the radio station were constructed specifically for that purpose.

The remains of two farmsteads are located on the northeast periphery of the radio station. One is just outside the historic boundary, the other next to Otter Cliff Road approximately 160 feet north of the main east-west site access road. Both farmsteads date to the early 19th century and do not relate directly to Radio Station use. The more southerly farmstead was extensively disturbed by radio station activity.

(Continued)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM

CONTINUATION SHEET

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formal memorial consisting of a bronze plaque on a large boulder was placed on the site of the former administration building in 1939. It commemorates the contribution of Alessandro Fabbri to the construction and operation of the Otter Cliffs Radio Station.

Although a set of base maps exist which illustrate development at the station between 1919 and 1934, there is great potential for additional archeological discovery. Several of the experimental booths were moved frequently from spot to spot. Many of the experiments required excavation for anchors and burial of great lengths of wire or cable. Because of the great secrecy with which the daily operations of the station were surrounded, much of the story of the radio station is not readily available. Archeological investigations and diligent research into Naval Archives will be necessary to bring the full story to light.

B SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input checked="" type="checkbox"/> ARCHEOLOGY HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input checked="" type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<input checked="" type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input checked="" type="checkbox"/> INVENTION		

SPECIFIC DATES

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

SUMMARY

The Otter Cliffs Radio Station was a U.S. Navy installation which operated from its commissioning August 22, 1917 until its dismantling and removal to the Schoodic Peninsula in 1934. During its early years, it was the site of vital experimentation in radio reception and transmission by some of the leading researchers in radio. By the end of 1918 it was the pre-eminent high frequency receiving station in the U.S. for European transmissions. It was associated with several significant "events" in communications history.

Because of the peculiar properties of its location and latitude, the Otter Cliffs Radio Station had outstanding reception capabilities. It quickly eclipsed the Navy's Belmar, New Jersey Radio station in quality of reception and importance for experimentation in the fledgling science. Some of the pioneers in radio development such as J. A. Proctor and Dr. Greenleaf Pickard of the Wireless Speciality Company (later absorbed into RCA), A. Hoyt Taylor, "Father of Radar," Dr. Charles A. Hoxie and Dr. Ernst Alexanderson of General Electric and others brought their inventions here for testing and refining. Atmospheric noise reduction hardware exhibiting "State-of-the-Art" quality was developed here. The first high-speed recorder of radio signals was tested here. Equipment for "jamming" or barraging hostile German radio signals and for preventing American signals from being jammed also was developed here.

By late 1919 the station had grown to approximately 200 men. It had become the sole receiving station in the U.S. for transmissions from Europe.

Throughout October and November 1918, the station received the first German peace overtures being transmitted to Washington and, it was here that initial word was received of the declaration of Armistice.

A transmission station was constructed for communicating with ships, allowing thousands of messages to be transmitted from returning soldiers. In May 1919 the station maintained contact with Navy seaplanes, one of which completed a trans-Atlantic crossing. In June of that year the site handled an enormous number of messages to and from President Wilson aboard a ship enroute to the Versailles Treaty Conference. In July, the station assisted a British dirigible making the first airship crossing of the Atlantic.

Through the early 1920's the station handled civilian telegrams until private enterprise (RCA) could take over the business.

(Continued)

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station continued in operation until 1934 when an agreement was reached among the Navy, Mr. D. Rockefeller, and the National Park Service to move the station to the Schoodic Peninsula so that Mr. Rockefeller could complete construction of a scenic road forming a loop around Otter Point. That station is still in operation today.

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Anonymous

n.d. "NBD & ME." Typed manuscript on file, Bar Harbor Historical Society files, Jessup Memorial Library, Bar Harbor, Maine.

Bar Harbor Record

1910-12 On file, Jessup Memorial Library, Bar Harbor, Maine.

Brown, Leonard E.

1971 Acadia National Park, Maine: History Basic Data of Historical and Historical Architecture, East Service Center, Washington, D.C.

Eastner, Harold

n.d.(a) Typed manuscript on file Denver Service Center.

n.d.(b) Typed manuscript on file, Bar Harbor Historical Society files, Jessup Memorial Library, Bar Harbor, Maine. Revised version of manuscript "(a)".

Department of the Navy Official Records

1918 On file National Archives, Washington, D.C.

1921 & 1934 Maps of the Otter Cliffs Radio Station, 1921 and 1934, Boston, Massachusetts.

Abbri, Alessandro

Personal correspondence. Typescript on file, Jessup Memorial Library, Bar Harbor, Maine.

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Hancock County Courthouse, Ellsworth, Maine.

Loweth, L. S.

1963 History of Communications - Electronics in the United States Navy, Washington, D.C., Government Printing Office.

Lowenden, Herbert C.

1979 "History of Otter Cliffs Radio Station, Bar Harbor, Maine." Typed manuscript on file, Jessup Memorial Library, Bar Harbor, Maine.

Personal correspondence, on file, Jessup Memorial Library, Bar Harbor, Maine.

1983 Personal communication.

(Continued)

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3

Jessup Memorial Library, Otter Cliffs Radio Station Photograph Collection, Bar Harbor, Maine.
Laylor, A. Hoyt

1948 Radio Reminiscences: A Half Century.

1960 U.S. Naval Research Laboratory, Washington, D.C.

1919 Report. On file Jessup Memorial Library, Bar Harbor, Maine.

Letters. Typescript at Jessup Memorial Library, Bar Harbor, Maine.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

United States Department of the Navy. Bureau of Yards and Docks. U.S. Navy Yard, Boston.

1920 U.S. Radio Station, Otter Cliffs, Bar Harbor, Maine. Plan of Fire Protection System 114-24-1. September 27, 1920.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 13.08 acres.

UTM REFERENCES

A	1,9	5,6,4	0,3,5	4,9	0,6	0,9,0	B	1,9	5,6,4	0,2,0	4,9	0,6	1,0,0
	ZONE	EASTING		NORTHING				ZONE	EASTING		NORTHING		
C	1,9	5,6,4	0,0,0	4,9	0,6	1,0,0	D	1,9	5,6,4	0,1,0	4,9	0,6	0,7,0
	ZONE	EASTING		NORTHING				ZONE	EASTING		NORTHING		

VERBAL BOUNDARY DESCRIPTION

The site's northern boundary extends east from Otter Cove along Fishhouse Road. At a point approximately 160 feet from Otter Cliff Road it turns southeast toward Otter Cliff Road where it crosses and proceeds another 150 feet. At that point it turns south for approximately 230 feet then east for 148 feet. Once again it turns south for 200 feet before turning west 820 feet to Otter Cove. These boundaries conform to those shown on the accompanying historic base map.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
Maine	23	Hancock County	009
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Craig Cellar

ORGANIZATION

National Park Service, Denver Service Center

DATE

January 25, 1984

STREET & NUMBER

755 Parfet St., P.O. Box 25287

TELEPHONE

(303) 234-6928

CITY OR TOWN

Lakewood, Colorado 80225

STATE

12 CERTIFICATION OF NOMINATION

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES ☐

NO ☐

NONE ☐

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Historic Preservation Officer has been allowed 90 days in which to present the nomination to the State Review Board and to evaluate its significance. The evaluated level of significance is ☐ National ☐ State ☐ Local.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE

DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION
ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER

Appendix 3 - Features and Dumps

Appendix 3 - Features and Dumps

Features

1. Brick-lined electrical manhole measuring 4.02' north/south by 6.05' east/west by 4.7' deep at the ends. It contains conduits and wiring holders; it is partially filled with water. Has circular, cast iron grated cover, 2.5' diameter, which rests on cast iron collar.
2. Hole in ground just southeast of Fabbri Memorial lined with uncut, coarse-grained granite stones laid several courses deep. Loose fill in bottom of hole lies against four vertical deteriorated wood posts covering an opening which appears to go downward to the west. This feature is about 3 feet across and 2.5 feet deep (extending down to fill, see Fig. 10). Function unknown.
3. Hole in ground, just southeast of Fabbri Memorial circa .8' in diameter at top, expands as it extends to more than 3 feet below the ground surface. Function unknown.
- 4 and 5. Stone steps of grey, fine-grained cut granite, ca. 3.6' long by 1.2' wide; exposed about .25' above the ground surface. Part of earlier path to memorial.
6. Linear subsurface concrete circa 8.5 or more feet long and about 1.5' wide. Area of somewhat discontinuous stunted grass extends for some 50' parallel to the connecting road. A subsurface water pipe runs parallel between the road and the feature. The concrete is thought to be part of Barracks B--possibly the porch steps.
7. Electrical manhole, identical to Feature 1 but is dry inside and has conduit extending from north wall.
8. Electrical manhole, probably identical to Feature 1 except lacks cover. Metal collar at ground surface is covered by a 6.3' long coarse-grained grey granite slab (Fig. 13).

9. Subsurface concrete foundations exposed by shovel tests R14ST3 and R15ST3. Concrete is medium texture grey matrix containing small aggregate (less than .02' diameter) imported crushed dark grey stone. Foundation ranges from .1' to .5' below ground surface; top has been broken away in places. It extends at least 2.0' below surface. Possibly part of radio station garage.
10. Modern gate posts on either side of entrance, near Otter Cliffs road. Used as reference point.
11. Road corner used as reference point.
12. Test R17ST5 used as reference point.
13. Circular stone-lined depression (well) ca. 15' in diameter by ca. 2' deep used as a dump. Stones are uncut coarse-grained red granite boulders ca. 2 to 3 feet in diameter. Contains both domestic and architectural debris; some relating to Navy period with other more recent trash overlying. Burned materials underlie the top levels of debris. Pre-20th century construction postulated.
14. Oval depression ca. 7' by 10' southeast of Feature 13; probable borrow area.
- 15-17. Three fine-grained grey cut-granite blocks set in place across old base entrance road, effectively blocking traffic from the Otter Cliffs road. Date of placement unknown. Size ranges from 1.5' cube to block 4.5' long.
18. Concrete slab 8.65' long, 1.55' wide by .7' above ground surface located just southwest of apple tree and major east/west foundation of Barracks B. Thought to be part of barracks porch. The concrete is identical to that found in Feature 9.

19. Concrete slab 8' by 1.45' by .7' above ground surface. Approximately 1.1' of the south end broken away. Barracks B porch; same concrete.

20. Barracks B foundations. Exposed above ground surface to 1.5' in some areas; buried up to .5' in others. Concrete used was identical to Feature 9. Exterior walls ca. .75' to .8' thick. Lag bolts imbedded in foundation bent to the east.

21. Brick and concrete window sill on the east/west foundation line of the eastward extension of Barracks B. Wire is used as reinforcing to hold the smoothed sandy concrete sill in place. Towards the interior of the building, brick pieces line the sill. Tree roots humped the upper portions of the feature and cracked the concrete away in several areas. Bricks may have been broken in half prior to insertion or may have had severe frost heave (Fig. 11).

22. Barracks B cellar wall running east/west with pressurized piping barely visible under slumped fill of soil and cobbles. Concrete is the same as Feature 9.

23. Two concrete slabs .25' thick, 1.85' north/south by 1.8' east/west; made of same concrete as Feature 9. Appears to be a walkway.

23A. Similar concrete slab measuring 1.85' north/south by 1.75' east/west but is somewhat thicker. West end is stepped in two .25' increments. Features 23 and 23A are connected by a subsurface foundation (Fig. 3).

24. Slight depression of same general configuration and size as Feature 23A. Lies south of Feature 23A at right angle. Function unknown.

25. Concrete curb or slab, ca. 7' by 1' by .4' situated in meadow area just south of connecting road. May be associated with 1940s ranger station or radio station pumphouse.

26. Concrete water tower footings, two of which contain heavy ferrous rods (Fig. 14).
27. Previously assigned to one part of water tower base.
28. Circular raised area ca. 24' across and ca. 2' high; covering site of old well.
29. Heavy cast-iron sewer pipe at 1.8' below surface angles slightly southeast/northwest. The ca. .45' external diameter pipe has a bell and spigot union towards east side of test.
30. Recent test dug by park for soil tests for sewage disposal.
31. Cesspool--series of three subsurface rectangular interconnected concrete chambers which drain northward, one into the next. These chambers are 2.2' north/south by 4.55' east/west by 1.6' deep. They are partially filled with water. A .4' diameter drain pipe extends from the northernmost chamber. They are partially covered by deteriorated concrete slabs.
32. Depression of size similar to Feature 31, aligned north/south and connected to Feature 31 by a shallow linear depression.
33. Dry-laid, coarse-grained red granite blocks, most unmodified, various sizes, in rectangular configuration (Fig. 9). A few are 2 courses high; one stone which shows heavy wear patterns may have been a threshold or step. The area inside and immediately adjacent to the foundation is raised above the rest of the surrounding area. Feature 13 is nearby to the east.
34. Galvanized metal eyelet tie-down stake adjacent to Feature 23.
35. Somewhat angular depression ca. 2' deep by ca. 8' across filled with bricks, mortar and large pieces of tin. Concrete pieces are scattered on the soil which is mounded up ca. 1.5' around the outside perimeter.

36. Galvanized metal eyelet tie-down stake. Somewhat different design from Feature 34.

37. Structural remains on west side of Ocean Drive consist of brick and mortar, poured concrete floor and/or sidewalk situated on very edge of west-facing cliff overlooking Otter Cove. Very similar to rest of radio station structures with the exception of the brick which is a different variety. The slope below is littered with structural debris and coal, glass, and metal.

38 and 39. Identical to Feature 36.

40. Threaded metal pipe set in ground, bent slightly to south/southeast. Pipe is .17' in diameter; about 1' is visible above ground.

41A. Depressed/eroded area.

41B. Scatter of cut-granite blocks.

41C. Cut granite blocks at far end of Feature 42.

42. Curvilinear berm or dam containing numerous cut granite blocks under the top soil/sod cover (Fig. 3).

43. Four small concrete piers, .8' by .8' by .8', set 10' apart. Adjacent is a 1.4' by .04' metal rod wrapped with copper wire; probably a ground wire.

44. Circular depression 8' in diameter with a visible depth of 1.5' filled with unmodified red granite cobbles and broken concrete pieces, some of which have a smoothed mortar finish; one piece has an overlap similar to feature 23A.

45. Poured concrete slab about .5' thick, measuring 12.3' north/south and 6.0' east/west. Has lag bolts set in from edges .3' at 4.5' intervals.

46. Structural remains at the southwest edge of the meadow. Foundations are ca. .8' thick, of the same concrete as other radio station remains. Five-gallon square metal cans and large paint cans (white paint) are dumped in the depressed area near the southwest corner of the foundation.

47. Stone-lined well ca. 8.0' in diameter. Stones are between 1.5' and 2.8' high set in 3 courses down to the waterline; the water is 2.5' deep to mud. Stones are unmodified red coarse-grained granites. The area around the well is slightly elevated from the rest of the meadow.

48. Three concrete pads/piers identical to Feature 43. The northwest corner pier is missing.

49. Rectangular depression or cellar lined with coarse-grained red granite blocks, narrow entryway to the south. Adjacent are three linear scatters and a somewhat circular concentration of similar stones (figure 3).

50. Subsurface patterned brick and mortar.

Dumps

1. A low area about 25' in diameter situated at the base of two large conifers in the woods some 100' south of Barracks A area contained pressed glass, green coke bottle dated 1923, paint can with white paint, one-gallon metal food cans, seven-strand copper wire.

2. Due south of Feature 26 was dump 2. Artifacts include milk bottle with 1937 date, a great deal of shoe leather, French's mustard jars, five-gallon square metal cans, one-gallon round metal cans, large, clear glass jars (one gallon size), bone, buckets, window glass, ceramics, sewer pipe. Dump appears to extend for some distance into the soil.

3. This dump is about 15' inside the woods east of Feature 26. It contains concrete pieces, pipe, large cans, wood framing, and batteries.

4. A depressed area around 10' in diameter situated at the base of a large fir tree some 50' northwest of Feature 47 contains seven-strand copper wire, heavy cable (more than 12 strand), and numerous other assorted pieces of wire, as well as a shovel blade, window glass, whiteware, curved glass, battery pieces, milk glass, and coal.

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Publication services were provided by the graphics staff of the Denver Service Center. NPS D-91, September 1985



BUILDINGS

No.	Location	Department Occupying	Structures
1	d4	Bureau of Eng.	Quarters
2	d4	Do.	Transmitting Building and Operating Room
3	d5	Do.	Quarters
5	d4	Do.	Steel Mill
6	c3	Do.	Do
8	d3	Do.	Shed
9	d3	Do.	Barracks
11	b4	Do.	Oil House
13	c6	Do.	Pump House
15	c6	Do.	Water Tank - 5000 gallon capacity
16	c7	Do.	Radio Direction Finder House
22	b3	Do.	Quarters
23	b6	Do.	Garage

References

- Water
- Sewer
- Electric Conduit
- Heating Conduit
- Hydrants
- Summer Mounds
- Electric Manholes
- Well
- Flagpole
- Gate Valve
- Dry Well
- Transformers and Poles
- Electric - overhead

Latitude of Station 44° 18' 32" N
Longitude of Station 66° 11' 43" W

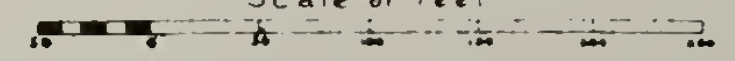
Area, 1308 Acres

The United States Radio Station
OTTER CLIFF, BAR HARBOR, ME.

MAP SHOWING

IMPROVEMENTS TO JUNE 30, 1934

Scale of Feet



Submitted

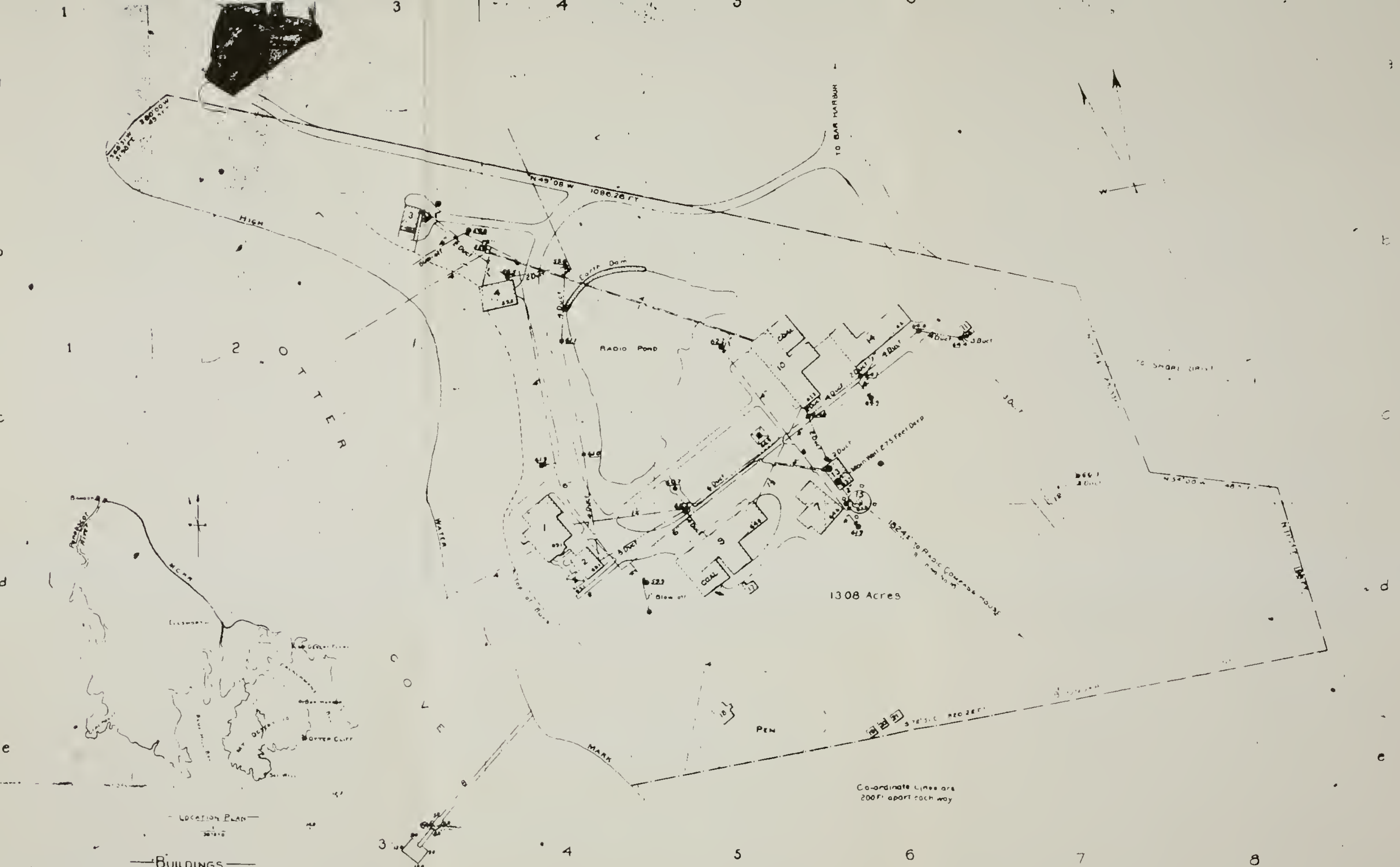
NAVY YARD, BOSTON, MASS.
PUBLIC WORKS DEPARTMENT

Figures Underlined show Grade of Ground
Figures at Buildings show Floor Grade
Figures at Structures 5-6-15 show Top of Foundation Grade
Figures at Landing Fleet show Depth of Water at Mean Sea Level

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LOCATION PLAN

BUILDINGS.

No.	Location	Department Occupying	Structures
1	d4	Bureau of Ing.	Administration Building
2	d4	Do	Operating Building
3	b3	Do	Cottage
4	b4	Do	Guard House
5	d4	Do	Steel Mast
6	c5	Do	Do
7	d3	Do	Old Garage To be demolished
8	e3	Do	Pier and Landing Float
9	d3	Do	Barracks - Enlisted Personnel
10	c3	Do	Storehouse for Supplies and Recreation Building
11	b6	Do	Gale House
12	c7	Do	Experimental Booths - under construction
13	c6	Do	Pump House
14	c6	Do	Garage
15	c6	Do	Water Tank 30,000 gallons capacity
16	d5	Do	Radio Compass House
17	e5	Do	Storehouse - Cold Storage
18	e6	Do	Sty
19	e6	Do	Paint Storage Temporary
20	c6	Do	Oil Do Do
21	e6	Do	Boatsman's Locker Do

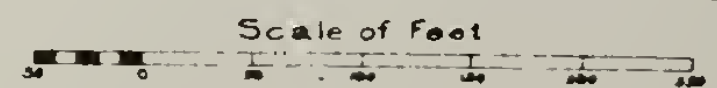
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- Dry Well
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 Figures at Landing Float show Depth of Water at Mean Sea Level

Latitude of Station 44°18'52" N
 Longitude of Station 68°14'43" W

The United States Radio Station
 OTTER CLIFF, BAR HARBOR, ME.
 MAP SHOWING
IMPROVEMENTS TO JUNE 30, 1921.



Submitted,
 Captain (cc) J. B. A.

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